

**PGED201GET**

**Teaching and Learning**

**M.A. English  
(Fourth Semester)  
Generic Elective Paper**

**Centre for Distance and Online Education  
Maulana Azad National Urdu University  
Hyderabad-32, Telangana- India**

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**Teaching and Learning**  
for  
**M.A. English**  
4<sup>th</sup> Semester  
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*Vice Chancellor*  
*Director*  
*Coordinator*

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## Message

Maulana Azad National Urdu University (MANUU) was established in 1998 by an Act of the Parliament. It is a central university with NAAC accreditation and the mandate of the university is: (1) promotion of Urdu language, (2) accessibility and availability of professional and technical education in Urdu medium, (3) providing education through traditional and distance learning mode, and (4) a specific focus on women's education. These are the points that distinguish this central university from all other central universities and give it a unique feature. It has been emphasized even in the National Education Policy 2020 to achieve education in mother tongues and regional languages.

The very objective of promotion of knowledge through Urdu is meant to facilitate the accessibility of contemporary knowledge and disciplines to Urdu knowing community. For a long time, there has been a dearth of course material in Urdu. The non-availability of books in Urdu is a matter of concern and Urdu University considers it a privilege to be part of the national process of providing course material in mother tongue/home language as per the vision of NEP 2020. Further, the Urdu speaking community is at a disadvantage in gaining updated knowledge and information in emerging areas or newer knowledge in existing fields due to non-availability of reading material in Urdu. The unavailability of content related to the above domains of knowledge has created an atmosphere of apathy towards attaining knowledge that could significantly affect the intellectual abilities of the Urdu knowing community. These are the challenges that Urdu University is confronted with. The scenario of Self Learning Materials (SLM) is also not very different. The unavailability of course books in Urdu at school/college level comes under discussion at the commencement of every academic year. Since the medium of instruction of Urdu University is only Urdu and it offers almost all the courses of important disciplines, the preparation of books of all these subjects in Urdu is the most important responsibility of the University. To achieve these objectives, MANUU makes available course material in the form of Self Learning Material (SLM) to the students of Distance Learning. The same is also available for sale to anyone interested in gaining knowledge through Urdu. To further provide access to learning, eSLM in Urdu is available for free download from the University website.

I am immensely pleased that due to the hard work of the concerned faculty and full cooperation of the writers, the process of publications of books has begun on a massive scale. To facilitate the students of Distance Learning, the process of preparing and publication of Self Learning Material (SLM) is of paramount importance to the University. I believe that we will be able to meet the requirements of a large Urdu knowing community through our Self Learning Material and will fulfill the mandate of this University and justify our presence in this country.

With best wishes,

**Prof. Syed Ainul Hasan**  
*Vice Chancellor*  
**MANUU, Hyderabad**

## Message

In the present era, distance education is recognized as a very effective and useful mode of education all over the world and a large number of people are benefiting from this mode of education. Maulana Azad National Urdu University also introduced the distance learning mode since its establishment in view of the educational needs of the Urdu speaking population. Maulana Azad National Urdu University started in 1998 with the Directorate of Distance Education and the regular programmes commenced from 2004, and subsequently various departments have been established.

The UGC has played a vital role in efficiently regulating the education system in the country. Various programs running under Open and Distance Learning (ODL) mode at CDOE are approved by UGC-DEB. The UGC-DEB has emphasized on synchronizing the syllabi of distance and regular mode to enhance the level of distance learning students. Since Maulana Azad National Urdu University is a dual mode university catering to both distance and traditional mode of learning, to achieve its goal in line with the UGC-DEB guidelines, Choice Based Credit System (CBCS) was introduced and Self Learning Materials are being prepared afresh for UG and PG programmes containing 6 blocks with 24 units and 4 blocks with 16 units respectively.

The Directorate of Distance Education offers a total of seventeen (17) programmes comprising of UG, PG, B.Ed., Diploma, and Certificate programmes. Along with this, programmes based on technical skills are also being started. A huge network of nine Regional Centers (Bengaluru, Bhopal, Darbhanga, Delhi, Kolkata, Mumbai, Patna, Ranchi, and Srinagar) and six Sub-Regional Centers (Hyderabad, Lucknow, Jammu, Nooh, Varanasi, and Amravati) was established to facilitate the students. Apart from this, an extension center has also been established in Vijayawada. More than one hundred and sixty Learner Support Centres (LSCs) and twenty Programme Centres are run simultaneously under these Regional and Sub-Regional Centers to provide educational and administrative support to the students. The Directorate of Distance Education makes full use of ICT in its educational and administrative activities, and offers admission to all its programs through online mode only.

The soft copies of Self Learning Material (SLM) for students are made available on the website of the Directorate of Distance Education and the links of audio and video recordings are also made available on the website. In addition, facilities of E-mail and WhatsApp groups are being provided to the students through which the learners are informed about various aspects of the program such as course registration, assignments, counselling, examinations, etc. In addition to regular counseling, additional remedial online counseling is being provided from the last two years to improve the academic standards of the students.

It is expected that the Directorate of Distance Education will play a vital role to bring educationally and economically backward population into the mainstream of contemporary education. In near future, changes will be made in various programmes under the New Education Policy (NEP-2020) in view of the educational needs and it is hoped that this will help in making the Open and Distance Learning system more efficient and effective.

**Prof. Mohd. Razaullah Khan**  
***Director, Centre for Distance and Online Education***  
MANUU, Hyderabad

## کورس کا تعارف

نظامت فاصلاتی تعلیم مولانا آزاد نیشنل اردو یونیورسٹی حیدرآباد کے لیے یہ بات انتہائی مسرت کا باعث ہے کہ یو جی سی ڈسٹنس ایجوکیشن بیورو (UGC-DEB) نے چھ ماسٹر زپر و گرام کو منظوری دی ہے۔ یو جی سی کی ہدایت کے تحت یونیورسٹی کے روایتی اور فاصلاتی نظام تعلیم دونوں کے لئے ایک ہی نصاب لازمی قرار دیا گیا ہے تاکہ نہ صرف ان دونوں نظام تعلیم کے طلباء کا معیار یکساں ہو بلکہ حصول تعلیم کے لیے ایک نظام تعلیم کے طلباء کو فراہم کی جانے والی مختلف سہولیات دوسرے نظام تعلیم کے طلباء کی طرف منتقلی بھی قابل عمل ہو۔

ان ضوابط کے تحت یونیورسٹی میں فراہم کیے جارہے تمام مضامین میں روایتی اور فاصلاتی دونوں نظام تعلیم کا ایک ہی نصاب تیار کیا گیا اور درسی مواد کی تیاری کی گئی جو یہ بیک وقت دونوں نظام تعلیم کے طلباء و طالبات کے لیے ذریعے استفادہ بن سکے۔

اس کورس کا عنوان "تدریس و اکتساب" ہے۔ یہ کورس تمام منظور شدہ ماسٹر پروگرام میں ایک جزک الیکٹیو کے بطور شامل کیا گیا ہے۔ جو حسب ذیل ہیں:

1. ماسٹر آف آرٹس (انگریزی)
2. ماسٹر آف آرٹس (اسلامک اسٹڈیز)
3. ماسٹر آف آرٹس (ہندی)
4. ماسٹر آف آرٹس (عربی)
5. ماسٹر آف آرٹس (اردو)
6. ماسٹر آف آرٹس (تاریخ)

یہ کورس نہ صرف یہ کہ تمام طلبہ کے لیے تدریس و اکتساب جیسے اہم موضوع پر معلومات فراہم کرتا ہے بلکہ ایسے طلبہ کے لیے خاص طور پر فائدہ مند ہے جو پیشہ درس و تدریس سے منسلک ہیں یا آئندہ اس پیشہ سے جڑنے کی خواہش رکھتے ہیں۔ اس حقیقت کو مد نظر رکھتے ہوئے اس کورس میں تدریس و اکتساب سے متعلق تمام اہم موضوعات اور پہلوؤں کا احاطہ کیا گیا ہے۔ اس کورس کے درسی مواد کی تیاری میں یونیورسٹی کے ملک بھر میں قائم 9 کالجس آف ٹیچر ایجوکیشن کے ماہرین اساتذہ کی خدمات حاصل کی گئیں ہیں۔

یہ کورس 4 کریڈٹس پر مشتمل ہے اور اسے چار بلاکس میں پیش کیا گیا ہے ہر بلاک میں 4 اکائیاں ہیں۔ اس طرح جملہ 16 اکائیاں اس کے نصاب میں شامل ہیں۔

کورس کے چاروں بلاک کے عنوانات حسب ذیل ہیں۔

بلاک (1) تدریس بطور پیشہ اور تدریس کا تعارف، بلاک (2) اکتساب کا تعارف، بلاک (3) تدریس و اکتساب کا عمل، بلاک (4) تدریس و اکتساب میں آئی سی ٹی۔

ہمیں خوشی ہے کہ ہم ایم۔ اے۔ کے جزک الیکٹیو کے اس کورس کی یہ کتاب آپ کے لیے پیش کر رہے ہیں۔ ہمیں قوی امید ہے کہ یہ کتاب نہ صرف یہ کہ ایم۔ اے۔ کے مختلف پروگراموں میں داخلہ لینے والے طلباء کے لیے مفید ثابت ہوگی بلکہ تمام افراد جو پیشہ تدریس سے منسلک ہیں وہ اس سے خاطر خواہ استفادہ کر سکتے ہیں۔

پروفیسر نجم السحر

پروگرام کوآرڈینیٹر، بی۔ ایڈ۔ (او۔ ڈی۔ ایل۔)



# **Teaching and Learning**



# **Unit-1: Concept of Teaching: Aims and Objectives of Teaching**

## **Structure**

**1.0** Introduction

**1.1** Objectives

**1.2** Meaning and Definition of Teaching

**1.3** Concept of Teaching

**1.4** The Evolving Concept of Teaching and Learning in India from Antiquity to the Present

**1.5** Aims and Objectives of Teaching and Learning

**1.6** Learning Outcomes

**1.7** Glossary

**1.8** Unit End Exercises

**1.9** Suggested Learning Resources

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## **1.0 Introduction**

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In a society with administrators who hold democratic ideals, arrangements are made for the common welfare of all inhabitants, and certain social institutions are organized to fulfill the ultimate needs of the society. These social institutions are always striving to perform their responsibilities. Among these, the management of education holds primary importance, as it fulfills the needs of the society, steers it towards development, and ensures the welfare of our future generations. To accomplish this task, we turn to the education and training of society, so that every young person in society can develop a sense of responsibility towards its needs, development, welfare, and protection.

The primary purpose of education is to better solve the complex issues of societal life, foster cooperative development and welfare, and enable every individual in society to enhance the quality of life with their unique talents and understanding. However, the success of education becomes easier with the classroom environment and the scientific knowledge and practice of human nature. Students achieve their desired growth in an educational environment, and a good teacher is often recognized not only as a scientist but also as a good artist. Teachers help students discover paths to achieving their creative potential, preparing them to face both positive and negative aspects of life, work, and relationships, and to remain satisfied with their performance.

In this unit, we will discuss all aspects of teaching and learning, along with the aims and objectives of education.

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## **1.1 Objectives**

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After completing this Unit, you will be able to:

- understand the meaning and concept of teaching and learning
- define teaching and learning
- comprehend the concept and scope of teaching and learning
- understand the changes in teaching and learning from ancient times, the medieval period, and the modern era
- understand the aims and objectives of teaching and learning

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## **1.2 Meaning and Definition of Teaching**

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Teaching is an art that comes into practice through a combination of scientific and artistic skills. For effective teaching, teachers achieve educational objectives by following certain general and specific principles of instruction. Teaching is an interaction between teachers and students where a less experienced student seeks to gain knowledge from an experienced expert on various subjects to master the topic. Teaching involves guidance from teachers that brings about positive changes in students' behavior, provides them with direction, and encourages learning experiences, while also enabling students to harmonize with their society by upholding its culture, traditions, and values. Teaching is also a process through which we achieve the established goals of society, requiring the participation of both students and teachers.

Teaching and learning is a social process, and explaining this process is quite challenging. However, when we relate teaching and learning to a specific practice and implement it, it can be easily explained. In the art of teaching (pedagogy), experts have tried to elucidate the educational process in two ways. One is the "scientific" method, which recommends the use of modern educational tools, strategies, methods, styles, and techniques, through which we positively transform the learning process of students. The other is the "art" method, which encompasses the artistic skills of teachers and presents knowledge in engaging ways to complete the learning process

## **Definitions of Teaching**

Teaching and learning is a complex process that requires us to understand it from the perspective of various experts to explain it.

“Teaching is an intimate contact between the more mature personality and a less mature one which is designed to further the education of the latter” (H.C. Morrison, 1934).

According to H.C. Morrison: “Teaching is the process in which an expert establishes a relationship with an inexperienced person (student) and prepares them for further education in the future.” This definition of teaching is an attempt to clarify the role of teachers in teaching, which points to the importance of teachers in teaching and the complete development of students."

“Teaching is an arrangement and manipulation of a situation in which there are gaps or obstructions which an individual will seek to overcome and from which he will learn in the course of doing so” (John Brubacher 1939).

According to John Brubacher: "Teaching is a process in which spaces are left for students to perform tasks, and challenges are created. Students attempt to solve these challenges, which prove helpful in their learning process and building self-confidence. This definition aims to prioritize students in all teaching activities and makes it clear that students can gain learning experiences by taking action themselves."

“Teaching is a system of actions intended to Induce learning”( B.O. Smith, 1960)

According to B.O. Smith: "Teaching is a system of activities (occupations) aimed at achieving effective acquisition of experiences." This definition also prioritizes the acquisition of learning experiences by students as the primary goal in teaching.

“Teaching is a form of interpersonal influence aimed at changing the behaviour potential of another person” ( N.L. Gage (1962)

According to N.L. Gage: "Teaching is a form of establishing mutual influence and impact on an individual, with the aim of bringing about changes in their behavior, thinking, or knowledge."

“Teaching is a system of actions involving an agent, an end in view and a situation including two sets of factors those over which the agent has no control (class size, characteristics of pupils, physical facilities, etc.) and those which he can modify (such as techniques and strategies of teaching." ( B.O. Smith, 1963)

According to B.O. Smith: "Teaching is a system in which a significant individual works on a perspective or a situation, involving two elements (students and teachers). In this system, there are some factors over which teachers have no control, such as classroom size, student physical characteristics, etc., and some factors they can manipulate, such as asking questions, providing guidance, structuring information, integrating ideas, etc."

In the light of this definition, we can see a perspective of educational interaction between teachers and students, as teaching is a collaborative process.

"Teaching is defined as an interactive process, primarily involving classroom talk which takes place between teacher and pupil and occurs during certain definable activities".(Edmund Amidon 1967).

According to Edmund Amidon: "The definition of a lesson can be expressed as an interactive process primarily involving dialogue between teachers and students, which occurs during various activities. In the light of the theories of all educational experts, we can say that teaching is a process that demonstrates collaboration between teachers and students, highlights the importance of teachers, influences student acquisition, etc. The ultimate aim of teaching is to bring about desired changes within students, which can vary in practical manner depending on different environments."

This highlights the collaborative nature of teaching and the transformative impact it aims to have on students.

### **Types of Teaching in Terms of Educational Action**

In terms of the educational environment, teaching and learning generally rely on three methods:

1. **Formal Education:** In formal education, the objectives, teaching methods, timing, location, as well as students' age, mental abilities, customs, preferences, and practical skills are predetermined. These are provided face-to-face (teachers and students) in accordance with designated time, place, and objectives. School education is an example of this.
2. **Informal Education:** Informal education does not have predetermined objectives, location, or timing. Instead, students spontaneously acquire learning through their own experiences, emotions, theories, or observations, gaining sudden insights or lessons. For example, we learn something through play, conversations with friends, through an incident, or by being influenced by someone, all of which fall under informal education.

3. **Non-Formal Education:** Non-formal education includes all teaching materials whose educational nature is different from formal education, where time and place are not fixed but are carried out under a specific purpose. This includes distance education, MOOC courses, SWAYAM courses, etc.

### **Teaching Methods Based on Operational Factors**

Teaching can be divided into three categories based on operational factors:

- **By Telling:** In this method, verbal explanations are used to provide instruction, incorporating various examples, stories, and instructional actions.
- **By Showing:** This method involves presenting various teaching aids in front of students, where demonstration is given precedence over mere verbal instruction. For instance, charts, models, videos, lab experiments, and other projects are used.
- **By Doing:** This method provides students with experiential learning opportunities through their actions, helping them understand both their strengths and weaknesses and setting their limits.

### **In Terms of Organization**

Teaching is generally categorized into three types based on organization:

1. **Autocratic Teaching:** In this type, teachers are active in teaching, and students acquire knowledge through listening. Autocratic teaching is teacher-centered and is used with a large number of students for delivering higher or extensive content.
2. **Democratic Teaching:** Democratic teaching focuses on students, where they participate in teaching based on their performance, abilities, and interests. Students ask and answer questions, exchange ideas, and demonstrate their abilities through their actions.
3. **Laissez-faire Teaching:** In laissez-faire teaching, teachers only prepare the teaching environment, teaching aids, and instructions. Students acquire knowledge based on their objectives, needs, interests, customs, preferences, and mental abilities. Teachers only prepare the environment and guide and supervise students when necessary.

### **In Terms of Objectives**

Teaching is also divided into three categories based on objectives:

1. **Teaching of Cognitive Domain:** This type of teaching focuses on developing students' cognitive abilities, including knowledge, comprehension, application, analysis, synthesis, and evaluation.
2. **Teaching of Affective Domain:** Teaching in the affective domain aims to organize students' interests, attitudes, and values and to develop their character.
3. **Teaching of Psychomotor Domain:** Teaching in the psychomotor domain aims to provide students with the ability to organize their actions (physical parts) and habits.

### **In Terms of Stages**

Teaching can be divided into three stages:

1. **Memory Level:** Teaching at this level is focused solely on recall, where students memorize things such as identification, meaning of words, theories, facts, common knowledge, different formulas, and facts.
2. **Understanding Level:** In this stage, teachers provide students with an understanding of the subject matter related to the material. This includes understanding theories and experiments, facts, and problems, where students acquire acquisition factors and experiences based on their mental abilities.
3. **Reflective Level:** In this stage, students search for solutions to their problems based on their abilities, creativity, research, and propose new theories based on their interests.

### **Elements Involved in Teaching**

In traditional teaching practices, the following elements are typically involved:

1. **Students:** In the process of teaching and learning, students hold paramount importance in the modern era. All aspects of education revolve around students, and educational courses are designed considering students' age, needs, mental abilities, physical development, and more.
2. **Subject Matter:** The attainment of objectives through teaching depends on the subject matter. Therefore, the importance of the subject matter cannot be overlooked alongside students because all elements of education are completed through the teaching of subject matter.
3. **Teachers:** In the current era, teachers hold the third position in educational practices. Nowadays, the role of teachers is limited to providing facilities, establishing educational environments, observing students, and providing access to



students. However, it is still impossible to sideline the role of teachers in the process of teaching. Teachers are essential for the success of teaching practices, but giving priority to students in educational and teaching practices is a real task.

4. **Technical Elements:** In the modern era, we cannot even conceive the success of teaching practices without technical assistance. Therefore, in today's era, we use various technical tools, transmission media, and technologies in teaching and learning to obtain effective learning experiences. Technical tools and tactics are an important part of teaching; teaching cannot be separated from technology.

### **Check Your Progress**

1. Describe the types of teaching based on action and functionality.
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2. Identify the important elements in traditional teaching practices.
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## **1.3 Concept of Teaching**

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### **Teaching: Meaning, Concept, and Definition**

From the above definitions of teaching, it is clear that teaching, in its broader sense, is a process that facilitates learning. Teaching is the practical application of knowledge, skills, and attributes designed to meet the educational needs of individuals or societies, thereby fulfilling the needs of both society and students. Teaching is an applied process where educational activities are chosen to achieve educational goals, which is the responsibility of the teaching profession. Moreover, an important duty of teaching is to fulfill the prescribed curriculum and provide students with ample opportunities to learn, obtain teaching values, and guide students towards social harmony. Teachers, through various teaching methods, factors, and practices, foster positive self-confidence and self-awareness in students. Although the role of teachers is often seen as limited to the classroom, the interaction between teachers and students is not the sole element in education. Teaching plans are made so that individuals can learn something in their early life and contribute to the development of their society, culture, and heritage. We can further elaborate on the nature of teaching in the following ways:

- **Teaching as a Science:** Many experts believe that teaching is based on scientific methods, techniques, and experiments, making it a scientific process.
- **Teaching as an Art:** Many experts argue that teaching is an art, and the artistic skills of teachers make the teaching process effective and sustain students' learning experiences.
- **Teaching as a Social and Cultural Process:** Educational objectives are implemented for society and by society, and teaching paves the way for these objectives, making it a social and cultural process.
- **Teaching as a Means of Knowledge:** Through the teaching process, students gain knowledge about things that are important and useful to them but which they cannot acquire on their own. The mutual cooperation of knowledge and practice is an essential part of teaching.
- **Teaching as an Interactive Process:** Teaching is a coordinated process established between students, teachers, and educational resources that guides and promotes students' development.
- **Teaching as a Developmental Process**
- **Teaching as a Process of Change in Character and Habits**
- **Teaching as Both a Scientific and Artistic Skill**
- **Teaching as a Traditional Practice Based on Mutual Cooperation Between Students and Teachers**
- **Teaching as an Observation, Measurement, and Reliable Adjustment**
- **Teaching as a Skilled Profession:** It is expected of every competent teacher to be familiar with general teaching methods.
- **Teaching as a Promoter of Learning Processes**
- **Teaching as Both a Conscious and Unconscious Process**
- **Teaching From Memory Level to Reflective Level**

#### **Characteristics of Good Teaching**

Teaching is a process aimed at achieving educational objectives, involving teachers, students, subject matter, and various technical factors. Utilizing all these elements is essential for good teaching. The following characteristics are essential for good teaching:

- **Relevance:** In the teaching process, the subject matter, teaching strategies, methods, educational resources, and teaching activities must be aligned with the curriculum.

- **Appropriate Time for Learning:** When designing the curriculum, appropriate time should be allocated for achieving the objectives included in the teaching process.
- **Proper Structure of Teaching:** Good teaching involves keeping students engaged, providing encouragement, studying students' understanding, offering feedback, and reinforcement.
- **Favorable Classroom Environment:** A good classroom environment conducive to learning includes a positive atmosphere, appropriate lighting, positive relationships between students and teachers, mutual student relationships, discipline, safety, and a sense of calm.
- **Teacher's Skills and Competence:** A competent teacher's skills and competence include communication skills, mastery of the subject matter, student motivation, and student guidance.
- **Source of Required Information for Students:** Teaching provides students with the necessary information.
- **Stimulating Learning Motivation:** Teaching generates a desire to learn in students.
- **Good Lesson Planning:** Good teaching requires proper lesson planning.
- **Active Student Participation:** Students are actively engaged in good teaching.
- **Inclination Towards Selected Knowledge:** Good teaching leads to the acquisition of selected knowledge.
- **Student-Centered and Democratic:** Good teaching is generally student-centered and carries a democratic outlook.
- **Compassionate and Empathetic:** Good teaching is filled with compassion and empathy.
- **Mutual Cooperation Between Students and Teachers:** Good teaching is based on mutual cooperation.
- **Based on Teacher's Prior Knowledge:** Good teaching relies on the teacher's prior knowledge.
- **Emotional Stability:** Good teaching fosters emotional stability.
- **Helping Students Adapt:** Good teaching helps students adapt.
- **Preparing for Changing Educational and Social Systems:** Good teaching prepares future generations for changing educational and social systems.
- **Fostering Student Abilities:** Good teaching enhances student abilities.

- **Teachers as Guides, Philosophers, Advisors, and Friends:** In good teaching, teachers play multiple roles as guides, philosophers, advisors, and friends.
- **Direct and Indirect Involvement of Teachers:** Teachers are involved both directly and indirectly in good teaching.
- **Harmony Between Teacher and Student:** Good teaching reflects harmony between teacher and student.

### **Check Your Progress**

1. List the characteristics of good teaching.
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2. Describe the nature of teaching.
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## **1.4 The Evolving Concept of Teaching and Learning in India From Antiquity to the Present**

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Education is a purposeful activity through which the holistic development and growth of students are achieved. These educational objectives are fulfilled through the teaching process. Through teaching and learning, the intended learning outcomes of students are completed, transforming their internal behaviors and habits into meaningful external actions. To accomplish these educational goals, it is necessary to understand our philosophy, sociology, and psychology, along with culture, traditions, and history, and then develop a curriculum that paves the way for teaching and learning. The history of teaching and learning is as old as education and our civilization. Different nations, countries, and societies have been providing education based on various curricula, some of which are still in practice today. These can be understood through the following points:

### **Era and Teaching Methods**

- **Primitive Era**
  - Teaching skills such as archery, hunting, agriculture, and other life skills.
- **Later Period**
  - Providing education based on social and religious life.
- **Ancient India**

- Teaching based on the Vedas, Upanishads, military training, and various professions like Brahmins, Vaishyas, Kshatriyas, and Shudras.
- **Medieval Period**
  - Teaching subjects like religion, history, philosophy, mathematics, and moral subjects.
- **Era of Progress**
  - Teaching science, professional subjects, along with curricular and extracurricular activities including history, philosophy, and geography.
- **Modern Era**
  - Teaching subjects like physical education, technology, technical sciences, modern sciences, medical sciences, and mental health.

The above information makes it clear that the history of teaching and learning is very old. Various methods of teaching have been in practice since ancient times, evolving with the progress of time. The teaching process has always been considered essential in every era. Some teaching systems were organized while others were based on the training and practices of teachers. Ancient India has always been a center of education. All communities and races in India have continuously demonstrated their presence in education and literature on Indian soil. All religions emerged through teaching and learning, and all religious leaders have used teaching as their tool. In the modern era, teaching has shifted focus from religious dominance to politics, sociology, science, technology, and other common subjects.

#### **Ancient Times**

- In ancient times, Vedic education was based on the four Vedas and Upanishads, and teaching was considered the sole right of the Brahmins. Mahatma Buddha and Jainism included common people in teaching and learning, which is considered to be between 200 BCE to 600 CE. Even this teaching was dominated by religion.

#### **Medieval Period**

- With the arrival of Muslims in India, the educational and teaching system also changed. Education became based on Islamic philosophy, including subjects like history, religion, philosophy, social sciences, and scientific sciences. This period is considered to be from 1000 CE to 1700 CE. Even today, you can find Madrasas and Darul Uloom across India.

### **British Period**

- During the British rule, the teaching system changed once again. Now, along with common subjects, Western philosophy, science, economics, and professional education were also introduced. Boards and commissions were regularly established to make teaching more effective. During this period, education was provided according to the level of education. In 1937, to bid farewell to the British style of education and training, Dr. Zakir Hussain and Mahatma Gandhi laid the foundation of basic education, which became very popular in India. Now, the purpose of teaching was the development of the nation, as basic education emphasized practical skills.

### **Post-Independence**

- In 1947, India became independent. After Indian independence, subjects like scientific sciences, social studies, agricultural knowledge, professional education including engineering, medical, and technical courses were introduced. Several boards and policies were established to organize education and teaching. In 2020, a new national education policy was formulated under the leadership of Mr. Kasturirangan. This national education policy emphasized the inclusion of technology in education after 34 years.

### **Modern Era**

- In the modern era, the teaching process is student-centered. All teaching activities are aimed at achieving the purposeful physical, emotional, sensory, and motor development of students, helping them harmonize with society and providing them with a prestigious position in society. Today's teaching is dynamic, where teachers prepare the teaching environment using educational tools and various techniques according to the curriculum, and students gain knowledge through developmental activities and tasks based on their interests, mental abilities, and facilities.

### **Check Your Progress**

1. Describe the history of teaching and learning.
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## 1.5 Aims and Objectives of Teaching and Learning

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Education is a purposeful activity through which the holistic development and growth of students are achieved. Education transforms objectives into goals and searches for these goals within subjects. The actions taken to achieve each educational objective are imbued with purposes. In teaching all subjects, teachers continuously strive to achieve these purposes and objectives.

### Meaning of Objectives

The development and growth of students are synonymous with the development of society, and this objective is fulfilled through the process of teaching and learning. Every subject included in teaching highlights a specific objective and completes the teaching process in some way. The objectives of teaching are based on the structure of the subject, which fulfills the mental, physical, and emotional development and growth of the students. Achieving all types of objectives during teaching is very challenging for the teacher since most objectives are related to the classroom teaching process, while some are connected to the external life of the school. These objectives provide us with a path to achieve educational goals.

### The Objectives of Teaching and Learning Include:

- **Helping Students Acquire Knowledge:** The primary objective of teaching is to help students acquire knowledge, which is not limited to textbooks but aims to foster knowledge and intelligence among students.
- **Shaping Students' Character and Behavior:** The purpose of teaching is to enhance students' knowledge, shaping their character, habits, and behavior, and bringing changes to their traditions and tendencies.
- **Fostering Independence:** Through teaching, teachers provide students with physical, mental, and emotional development so that they can become self-reliant.
- **Encouraging Students:** Teachers motivate and strengthen students, encouraging them to achieve their goals and succeed in their practical lives.
- **Establishing Creative Thinking:** Teachers strive to cultivate creative thinking and problem-solving abilities in students through teaching.
- **Promoting Social Skills:** The teaching process aims to enhance values related to overall life, enabling students to achieve complete development.

- **Preparing for the Future:** Teachers identify and nurture students' professional skills through teaching, helping them lead a prosperous future life.

### **Importance of Objectives**

The knowledge, understanding, and application of each subject by students are related not only to present life but also to future life. Therefore, the objectives of teaching and learning are determined to enable students to easily acquire the values, traditions, tendencies, and skills of the subjects. It is also crucial for a teacher to have a clear idea of the concepts, characteristics, and skills they want to develop in students, as well as the principles, facts, values, traditions, and tendencies they aim to instill. Achieving all these comes under a purpose, making the importance of objectives undeniable in all forms of education and teaching.

If a teacher has objectives in mind beforehand, they can prepare suitable actions to achieve those objectives. Otherwise, without objectives, their efforts may be in vain, leading to unsatisfactory results for students, teachers, and society.

### **Meaning of Purposes**

All educational frameworks and curricula are oriented towards those objectives that enable the complete development and growth of students. Since a teacher can achieve only one objective at a time, it is not possible to accomplish all objectives simultaneously. Therefore, teaching objectives are divided into several parts, and they are achieved in stages. Each lesson has several steps to achieve its objectives, and each step taken to achieve an objective is called a purpose. Each objective is deeply connected to the values we want to instill in students through teaching, and purposes are essentially those values for which we take actions to achieve an objective.

### **Importance of Purposes**

- **Defining or Explaining a Concept:** Teachers can achieve their objectives by defining or explaining a concept through purposes.
- **Guiding the Path to Achieve Objectives:** Purposes pave the way for teachers to achieve an objective.
- **Micro Teaching Activities:** Purposes can be considered micro teaching activities.
- **Determining Teaching Strategies:** Teaching strategies, methods, and techniques are determined and used through purposes.
- **Changing Student Behavior and Tendencies:** Teachers can bring changes to students' behavior, traditions, and tendencies through purposes.



### Difference between Purposes and Objectives

Purposes	Objectives
Purposes can be achieved within a specified time.	Objectives require a considerable amount of time to be achieved.
Purposes are the foundational elements of any teaching process.	Objectives are general statements that outline the direction of an action.
Purposes clarify what will be achieved after teaching.	Objectives clarify why a subject is being taught.
Purposes are limited and specific.	Objectives are broad and vague.
Achieving purposes is the teacher's responsibility.	Achieving objectives is the responsibility of the school and society.

#### Check Your Progress:

1. Describe the importance of objectives.

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2. Explain the difference between purposes and objectives.

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## 1.6 Learning Outcomes

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Upon the completion of this Unit students should be able to:

- understand definition of teaching
- identify important objectives of teaching
- recognize some of the aims of teaching

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## 1.7 Glossary

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**Memory Level:** Based on memorization

**Understanding Level:** Provides students with comprehension related to the subject matter.

**Reflective Level:** Reflection based on the mind

**Teaching is a Knowledge Process:** Teaching is a medium of knowledge.

**Teaching is a coordinated Process:** Teaching is an interactive process.

**Similarities:** Similarity between two things

**Formal Education:** Formal education is provided and acquired in a face-to-face setting between teachers and students.

**Informal Education:** The objectives of informal education are not fixed in terms of place and time, etc.

**Non-Formal Education:** Non-formal education

**Ancient Period:** Early period

**Medieval Period:** Generally considered the period from 1100 AD to 1700 AD.

**Objectives:** Objectives can be achieved within a set timeframe. A single aim may include multiple objectives.

**Aims:** Aims clarify why a particular subject is being taught.

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## 1.8 Unit End Exercises

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### Objective Questions

- The specific objectives of teaching in the classroom are:
  - To develop creative thinking in students
  - To promote the all-round personality of students
  - To provide information
  - To only help students achieve success in the classroom
- What is the method of education in which only curriculum development and teaching methods are not planned?
  - Formal Education
  - Non-Formal Education
  - Informal Education
  - Fixed Education
- Who was responsible for providing education in ancient India?
  - The Vedas
  - The Pandits
  - The Vaishyas

(d) The Shudras

4. In the medieval period, education was provided:

(a) In maktabas and madrasas

(b) In gurukuls

(c) In schools

(d) Nowhere

5. Which type of teaching is not categorized by organization?

(a) Laissez-faire

(b) Authoritarian teaching

(c) Democratic teaching

(d) Non-formal education

### Short Answer Questions

1. Highlight the changing perspectives of education and teaching in India.
2. Clarify the difference between the objectives and aims of teaching.
3. Describe the key characteristics of effective teaching.
4. Write a note on the collaboration between teachers and students in the teaching process.
5. How can effective teaching contribute to the formation of society?

### Long Answer Questions

1. Introduce the modern tools that assist in providing teaching.
2. Explain the role of teachers in teaching with examples.

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## 1.9 Suggested Learning Resources

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3. Ansari, T. A. (2019). Uses of ICT in Teaching learning and Education: Vol. I, 2019th, ISBN-93-87635-74-0, Funded by, NCPUL, MHRD, Published by Arshia Publication, New Delhi. India.
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## **Unit 2: Important Aspects of Teaching**

### **Structure**

- 2.0 Introduction
- 2.1 Objectives
- 2.2 Principles & Maxims of Teaching
- 2.3 Phases of Teaching
- 2.4 Levels of Teaching
- 2.5 Process of Teaching
- 2.6 Teaching Skills
- 2.7 Teaching Style
- 2.8 Learning Outcomes
- 2.9 Glossary
- 2.10 Unit End Exercises
- 2.11 Suggested Learning Resources

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### **2.0 Introduction**

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Teaching cannot be successfully carried out without adhering to the established principles and methods of teaching. Therefore, in this unit, we will gain information about the teaching process, teaching principles, teaching skills, teaching phases, and teaching methods.

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### **2.1 Objectives**

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By the end of studying this Unit, students will be able to:

- understand the principles and skills of teaching.
- explain the various phases of teaching.
- describe the teaching process.
- interpret and apply teaching skills.
- be familiar with teaching styles.

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## 2.2 Principles and Maxims of Teaching

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### **Teaching Principles and Maxims:**

The principles of teaching are the "laws and rules" that are used in teaching so that the lesson can be made easy and understandable to everyone. If a teacher uses these principles during teaching, then undoubtedly their teaching will be effective and meaningful. Therefore, below are presented the principles of teaching one after the other.

1. **Principle of Definite Aim:** It is extremely necessary to determine educational objectives before teaching because aimless teaching is like setting out on a journey without a destination, meaning we don't even know where we want to go. Therefore, it is essential to determine before teaching why the lesson is being taught, what additional knowledge and skills need to be imparted to the students, what abilities and talents need to be encouraged, and through this teaching method, teaching objectives can be easily achieved.
2. **Principle of Planning:** No program can be successful without planning. Planning is a very important stage in teaching; teachers should plan properly before coming to the actual classroom teaching. The success of teaching depends on the planning and implementation of teachers in the classroom.
3. **Principle of Flexibility:** Teaching wisdom should be flexible so that changes and adjustments can be made in it according to the conditions of the classroom and the needs of the students. Teachers should have creative abilities so that they can make teaching effective by using different teaching strategies according to the needs.
4. **Principle of Utilizing Past Experiences:** Past experiences are fundamental for acquiring new information for students. Therefore, teachers should examine the students' previous knowledge and relate new information to the current lesson based on old experiences.
5. **Principle of Child Centeredness:** Education should be according to the needs, abilities, and interests of the students, and teaching should be activity-based so that students can learn actively and dynamically. In the modern educational system, students are central. According to the National Curriculum Framework (NCF), students are active participants and teachers are facilitators.
6. **Principle of Individual Differences:** As we know, every child is different from the other. Teachers should keep individual differences in mind while teaching and teach according to the students' abilities and interests.

7. **Principle of Linking with Actual Life:** Teachers should provide education that not only remains confined to the classroom but also relates to everyday life and home environment. According to the NCF-2005, learning should move beyond the four walls of the school. Education should be linked with real-life experiences, which not only boosts students' morale but also makes the lesson easier to understand.
8. **Principle of Correlating with Other Subjects:** It is essential for creating interest in a subject to correlate one subject with another. In effective teaching, the teacher connects one subject with another so that the subject can be better understood.
9. **Principles of Effective Strategies and Instructional Materials:** Effective strategy in teaching is very important. Teachers should adopt effective teaching methods so that students can acquire maximum knowledge, and teaching aids and other instructional materials should be used effectively.
10. **Principle of Active Participation and Involvement:** In modern education, it is essential for children to be at the center of learning and teaching so that they can actively participate in the process of learning. Teachers should use activity-based teaching methods so that more and more students become involved in learning and become active participants.

**Principle of Favorable Environment:** The teacher should create such a conducive environment that it becomes a motivating factor for learning. Proper arrangement of lighting, furniture, and other essential amenities should be made. The teacher should maintain appropriate discipline and order compassionately, while also remaining firm.

**Principle of Motivation:** When there is an interest in the subject being taught, it creates an interest in acquisition. Therefore, the teacher should first motivate the students for acquisition.

**Principle of Readiness:** To make teaching effective, it is necessary to prepare the students for learning because it is said that you can lead a horse to water but cannot make it drink until it is ready.

**Maxims of Teaching:** Every teacher uses various methods and principles to make their lesson effective and purposeful so that the learning process can be made interesting, easy, and effective. These established principles, various methods, and rules for working help in making education interesting, easy, and effective, which are called Maxims of Teaching.

Here are some specific teaching maxims provided by experts:

1. **From Known to Unknown:** Teaching new knowledge by connecting it with old knowledge makes teaching clearer and more fruitful. This makes the process of learning easier. For example, when teaching children English and introducing the word "water," it can be explained that in English, we say 'water' for 'پانی'. This method of teaching helps learners understand things completely and easily, making teaching certain, clear, and more productive.
2. **From Simple to Complex:** The basic purpose of teaching is for the teacher, and the purpose of learners is to learn something. In this process of teaching and learning, simple or easy things should be presented first to the students, and gradually, they should be progressed towards complex or difficult things. Presenting simple material increases the interest, confidence, and motivation of the learners.
3. **From Concrete to Abstract:** Concrete things are tangible things. By using the senses, students learn and understand more easily and remember the material forever. Conversely, abstract things are just imaginary things. If abstract things or ideas are presented, they are quickly forgotten. As Froebel said, "Our lessons should begin from concrete and end at abstract."
4. **From Analysis to Synthesis:** When we divide something into parts or separate elements, it is called analysis. This is a process that is extremely useful and helpful in understanding anything. For example, to explain the structure of the heart or the functions, the parts of the heart are shown separately, and information about each part is given. Then students are taught the structure or system of the heart. This way, even a very difficult thing can be explained easily. Synthesis is exactly the opposite of analysis. All parts are shown collectively.

**From Particular to General:**

A teacher should always progress from the particular to the general statements. Understanding general facts, principles, and concepts can be difficult, so the teacher should always present specific things first and then move on to general ones. For example, if a teacher is teaching the continuous tense in English, they should first give a few specific examples and then generalize based on them, explaining that this tense is used to denote an action ongoing at the time of speaking. This way, the teacher should progress from the particular to the general.



### **From Empirical to Rational:**

Empirical knowledge is based on observations and experiments and does not require any reasoning. On the other hand, rational knowledge is based on evidence and explanations. For example, suppose students are taught that water boils when heated. They should first be asked to observe water boiling themselves when heated. Then the teacher should explain that when water is heated, molecules become active and gain thermal energy, resulting in thermal agitation, which causes water to boil.

### **Whole to Part:**

First, explain something completely and then understand its details, i.e., understanding different parts. This means explaining a complete thing first, such as explaining a plant in its entirety, and then explaining its parts.

### **Check Your Progress:**

1. Explain the principle of concentration in teaching.

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2. What do you understand by the teaching maxim "From simple to complex"?

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## **2.3 Phases of Teaching**

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### **1. Pre-active phase of teaching:**

- This phase involves planning the teaching process.
- Objectives are determined.
- Selection of teaching material or content.
- Teaching methods.
- Selection of appropriate pedagogy and methodology.
- Preparation of teaching aids.

### **2. Interactive phase of teaching:**

- This phase is primarily concerned with the implementation of the planned teaching and learning process.
- The teacher provides various stimuli to engage students in the classroom to carry out teaching activities.

- In this phase, teachers provide a conducive environment for learning to students.

Teachers interact with learners through:

- Asking questions
- Listening to student responses
- Providing guidance
- Giving explanations, etc.

### **3. Post-active phase of teaching:**

- This phase is the evaluative phase of teaching.
- Activities in this phase include:
  - Summarizing teaching activities
  - Assessment and evaluation
  - Selection of evaluation tools and techniques
  - Practical testing

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## **2.4 Levels of Teaching**

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### **1. Memory Level Teaching:**

- This level focuses on memorization as the key aspect of learning.
- Intelligence plays no role, and critical thinking abilities are not emphasized.
- The purpose is to provide students with information without necessarily understanding it.
- Teaching aids like visual aids, models, charts, maps, images, TV, and radio are used to make teaching effective, interesting, and understandable.

### **2. Understanding Level Teaching:**

- This level emphasizes understanding over mere memorization.
- Critical thinking skills such as reasoning, imagination, analysis, synthesis, comparison, and generalization are promoted.
- Students comprehend concepts and materials.
- Teachers encourage discussions, seminars, explanations, observations, and question-answer sessions to promote learning.

### **3. Reflective Level Teaching:**

- Reflective level teaching is also known as "problem-focused" teaching.

- It involves reflective thinking.
- This level of teaching encourages learners to think about and reflect on the concepts and materials they have learned.
- It promotes the discovery of facts and the development of problem-solving skills.
- Learners understand situations and solve problems, applying their critical thinking abilities.
- Teachers play a democratic role in this level of teaching.

**Check Your Progress:**

1. Explain the interactive phase of teaching

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2. What do you understand by reflective level teaching? Explain.

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## **2.5 Process of Teaching**

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Teaching process is fundamentally an action which involves planning, implementation, and evaluation.

**Planning:**

According to Y. Dror, planning is the process of arranging decisions for reaching a goal in the future using available means. Desired objectives are determined beforehand through planning, and preparation for the required action is made accordingly.

**Implementation:**

Implementation refers to the efforts made to achieve the predetermined objectives. After planning, if efforts are not made, and the plan is not put into action, the projects become meaningless. Therefore, the teacher should not only rely on planning but also act upon it.

**Evaluation:**

Taking a systematic review of one's own and the students' performance is crucial for the success of teaching and learning. It's essential to understand whether you're teaching effectively and if your students are learning effectively. It's necessary to regularly assess the progress and what the students have learned.

**Check Your Progress:**

1. Explain the importance of planning in the teaching process.
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**2.6 Teaching Skills**

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Effective teaching requires specific skills. A good teacher learns these skills and applies them in teaching. Microteaching is a teaching technique that helps trainee teachers practice different skills and gain mastery over them. D.W. Allen says that microteaching is a teaching scale through which every aspect of classroom activity is assessed. Initially, Allen and Ray (1969) introduced 13 teaching skills:

- Movement skills
- Introduction or lesson presentation
- Creating proximity with the lesson
- Silence and non-verbal cues
- Reinforcement
- Asking questions
- Asking research questions
- Presenting the same question in different ways
- Identifying student behavior
- Providing examples
- Speaking
- High-level questions
- Reviewing in an organized manner

Regular practice is conducted to develop competence and talent in the aforementioned teaching skills. Now, let's learn about these skills.

**Skill of Introduction:**

In the teaching process, introducing a new lesson while connecting it to students' prior knowledge makes the lesson more interesting and effective. Teachers should introduce the lesson in the best possible manner before starting any topic. Through the skill of introduction, students' interest and motivation towards the lesson can be created.

**Skill of Questioning:**

The art of questioning is used to assess students' understanding and knowledge. By using the skill of questioning, teachers can gauge students' knowledge and understand if students have understood a particular topic. After questioning, if a teacher realizes that students have not understood a particular topic well, they can try to explain things in an easier way for better understanding.

**Skill of Stimulus Variation:**

The skill of stimulus variation in teaching is a technique that plays an important role in focusing students' attention on the content. Therefore, the teacher sometimes moves from their place to the back of the classroom, uses the blackboard, asks questions among students, and uses various movements and pauses during lesson explanation.

**Skill of Explaining:**

In microteaching, the most important skill among teaching skills is the skill of explanation. Explanation is a scholarly activity that teachers must possess to make a topic or lesson effective. If a teacher tries to answer questions like why? what? how? related to any concept, then he is definitely explaining the lesson.

**Skill of Demonstration:**

Demonstration in teaching helps students to understand things in a meaningful and easy way. It helps teachers to relate learning to real-life situations. Demonstration presents tools, experiments, or models to explain principles, concepts, and theories. It creates a lively environment in the classroom.

**Skill of Achieving Closure:**

This skill refers to the activities through which the teacher summarizes the lesson, establishes a connection or proximity with new material. This skill is in the context of the introduction skill.

**Skill of Blackboard Writing:**

The skill of using the blackboard is essential for the teacher to focus attention, gain attention, and explain important terms and concepts. The blackboard should be used properly, with writing being clear and orderly, important points highlighted, and students in the last bench being able to read clearly. If attention is paid to these points and implemented, teaching will surely be effective and beneficial.

### **Check Your Progress:**

1. Explain the skill of stimulus variation in teaching.
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## **2.7 Teaching Styles**

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Albert Einstein famously said, "I never teach my pupils. I only attempt to provide the conditions in which they can learn." Looking at it this way, there are various styles of teaching. Now, it depends on the teacher how they teach the students and what kind of teaching environment they provide. Below are some specific teaching styles:

1. **Autocratic Style of Teaching:** The autocratic teaching style is a traditional approach where the teacher is the center of attention or the material is central. Here, the teacher is active while the students are passive. Autocratic teaching is used to achieve teaching goals and objectives. The teacher determines the material and tries to impose knowledge on the students' minds, considering the interests, perspectives, abilities, and needs of the students. In such an environment, students do not have the freedom to express their thoughts. Therefore, in these authoritative practicalities, emphasis is only given to mental exposure. It includes lectures, demonstrations, tutorials, programmed instructions, etc. Lecture is mostly used in this teaching style.
2. **Democratic Teaching Style:** In the democratic teaching style, the focus is on the students because they determine the material. Therefore, the position of the students is primary and that of the teachers is secondary. As a result of its use, there is more interaction between students and teachers. Teaching is tailored to the interests, perspectives, abilities, needs, and mental levels of the students. Democratic practicality is demonstrated, and hence intelligent children benefit from it. Group discussion is an important method of teaching in democratic practicality.
3. **Participatory Teaching Style:** Participatory education is a perspective of learning with mutual cooperation that makes students active in the process of learning. In this, students and teachers work together to achieve educational objectives. The modern teaching process has become child-centered from teacher-centered. It is essential for the student to be fully engaged in the process of teaching and learning so that the teaching process can be better. Children naturally have many abilities. To bring internal abilities to the

forefront, cooperation or inclusion of students is essential in the acquisition process. For this, discussion, investigation, research, practical activities, creative actions, role-playing, and statements, etc., can be included in the acquisition process by fully engaging students.

**Check Your Progress:**

1. What do you understand from the participatory teaching style? Explain.
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## **2.8 Learning Outcomes**

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After studying this Unit, you should have learned the following:

- Teaching maxims, which are different ways, rules of working by which education is made interesting, easy, and effective, are known as the maxims of teaching.
- The teaching process consists of three stages:
  1. Pre-active phase of teaching (Project Phase)
  2. Interactive phase of teaching (Implementation phase)
  3. Post-active phase of teaching (Accountability phase)
- Classroom teaching and learning refer to the joint action performed between teachers and students.
- The teaching process occurs at different levels:
  1. Teaching at the memorization level
  2. Teaching at the understanding level
  3. Teaching at the reflective level
- Teaching is fundamentally an action that involves planning, implementation, and evaluation.
- Microteaching is a teaching technique that helps trainee teachers practice different skills and gain mastery over them.
- Initially, Allen and Ray (1969) introduced teaching skills.

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## **2.9 Glossary**

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**Principle:** A fundamental general law, principle, or concept.

**Flexible:** The ability to easily change or adapt according to circumstances.

**Child Centred:** Teaching approach that focuses on the child.

**Reflective Level:** Teaching at the reflective level is teaching that focuses on the method of problem-solving and encourages imaginative thinking in the student.

**Autocratic Style:** A teaching style where the teacher has complete control over the students and the teaching process.

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## 2.10 Unit End Exercises

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### Objective Questions

1. How many stages are there in teaching? (a) One (b) Two (c) Three (d) Four
2. Which of the following is not a teaching style? (a) Democratic (b) Autocratic (c) Cooperative (d) Advisory
3. What are the specific objectives of teaching? (a) Planning (b) Implementation (c) Evaluation (d) All of the above

### Short Answer Questions

1. Explain different principles of teaching.
2. Briefly explain the teaching process.
3. What do you understand by the principle of compatibility? Explain.
4. Define teaching styles.

### Long Answer Questions

1. What are teaching skills? Explain in detail.
2. Explain the teaching stages and levels in detail.
3. Elaborate on the principles of teaching.
4. Write a comprehensive description of teaching maxims.



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## 2.11 Suggested Learning Resources

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1. Agrawal, P. C., & Jain, S. C. (2009). *Effective teaching: A practical guide to improving your teaching skills*. PHI Learning Private Limited.
2. Viswanadham, V. (2016). *Teaching techniques and pedagogical innovations: Theories and practices*. Bloomsbury Publishing India.
3. Hegde, M. N. (2015). *Pedagogy: Principles and practices*. Cambridge University Press India.
4. Srivathsan, K. R. (2014). *Effective teaching in higher education*. SAGE Publications India.
5. Batra, P., & Mathew, R. (Eds.). (2014). *Teaching and learning: Pedagogy, curriculum and culture*. SAGE Publications India.
6. Roy, A. (2015). *Effective Teaching: Principles and Practice*. PHI Learning Private Limited.
7. Srivastava, N. (2014). *Effective Teaching in Classroom Management*. Discovery Publishing House.

## **Unit 3: Instructional Objectives and Classroom Management**

### **Structure**

**3.0** Introduction

**3.1** Objectives

**3.2** Understanding of Different Concepts of Goals, Objectives, Instructional Objectives, and Targets in Teaching

**3.3** Bloom's Taxonomy of Educational Objectives

**3.3.1** Different Domains of Taxonomy of Educational Objectives (Cognitive Domain, Affective Domain, Psychomotor Domain)

**3.4** Meaning of Classroom Management and Organization

**3.5** Role of Teacher in Classroom Management and Organization

**3.6** Learning Outcomes

**3.7** Glossary

**3.8** Unit End Exercises

**3.9** Suggested Learning Resources

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### **3.0 Introduction**

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Education is a process that affects our society, culture, and civilization along with our cultural heritage and historical legacy. The process of education is completed through teaching. It is a process that creates coherence within the system of society, raises awareness within the society, directs society towards progress and modernity, and fosters the values, rules, laws, and ethics within society. The process of education flourishes through teaching and learning activities. Experts consider teaching a purposeful process, where "when an expert person provides information or a skill to a less expert person," the process of education is completed through teaching. Here, we will focus on the word "provide." "Providing" means sharing one's experiences or exchanging information. Teaching is a process understood and recognized both as a science and an art. In this unit, we will understand the technical skills of teaching, various concepts of goals and objectives in teaching, as well as the role of teachers in classroom management and organization.

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## 3.1 Objectives

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After completing this unit, you will be able to:

- state the goals and objectives of teaching.
- differentiate between instructional objectives and targets in teaching.
- understand bloom's taxonomy of educational objectives.
- explain the cognitive domain, affective domain, and psychomotor domain.
- understand and explain classroom management and organization.
- understand the roles and factors of teachers in classroom organization.

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## 3.2 Understanding Different Concepts of Goals, Objectives, Instructional Objectives, and Targets in Teaching

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### **Importance of Education**

The importance and utility of education for a society are immense. Aristotle highlighted this by saying, "An educated person is as different from an uneducated person as a living person is from a dead one." According to Aristotle, education is the process that validates a person's life because an educated person has developed the necessary abilities for social life, while an uneducated person is akin to a living corpse, performing life's tasks but not fully realizing their potential.

### **Purposeful Process of Education**

Education is a purposeful process whose objectives are achieved through teaching, a practice that has been in existence since the dawn of human civilization. All nations and races place primary importance on teaching, and teachers are accorded a revered status. Teaching is a challenging process in which a person is molded into an organized structure of society, developing their mental, emotional, physical, spiritual, and professional growth to become an asset to society. All educational goals, objectives, and targets are attained through teaching, which underscores its importance. Let's discuss some perspectives on teaching.

### **Teaching as an Art**

Teaching is considered an art because it emphasizes the imaginative and artistic skills of teachers. This approach creates a valuable learning environment in the classroom, enabling students to acquire knowledge effectively.

### **Teaching as a Science**

As a science, teaching involves logical theories, technical and mechanized learning, and scientific methods to achieve its goals efficiently.

### **Teaching as a Professional and Social Process**

Teaching is a professional and social process through which we meet the needs of all community members and prepare them for the future.

### **Teaching as a Purposeful and Performance-Based Process**

Teaching is a purposeful and performance-based process where goals and objectives are predefined and achieved through educational and instructional activities.

### **Teaching as a Communicative and Linguistic Process**

Teaching enhances various language skills in students, allowing them to express their emotions and showcase their abilities.

### **Goals, Objectives, and Targets in Teaching**

Education is recognized as a social process aimed at societal development, with goals, objectives, and targets aligned with social theories. Education is a purposeful process set by society for its benefit. Every individual has a life goal, which is divided into objectives, and each objective is further broken down into aims to be achieved over time. Understanding these concepts separately in the context of teaching is essential.

### **Teaching Goals**

All educational and instructional institutions, staff, and especially teachers need to be well-informed about the goals, objectives, and aims of education and teaching. Educational or instructional goals are broader and more general compared to objectives and aims. When we discuss teaching goals, we focus on the learning process through which the student will achieve these goals. We do not look at the specific activities students will undertake after learning the subject or lesson, as achieving a goal requires time and involves numerous activities, skills, competencies, and other contributing factors.

For example, if our goal is to become a teacher, we need educational qualifications, such as a degree (an objective). After obtaining the degree, we might need a professional qualification, such as a B.Ed. (another objective). Additionally, we need various technical, artistic, communicative skills, and knowledge of sociology, psychology, and other competencies to understand students. All these fall under aims achieved through various objectives. A goal

provides a purposeful direction for life, enabling the use of learned skills and competencies to maintain life circumstances effectively and secure better livelihood opportunities.

Generally, the goal is to develop the following characteristics in students:

- **Motivation:** Foster motivation within students.
- **Self-Confidence:** Build self-confidence in students.
- **Professional Skills:** Develop professional skills in students.
- **Preparation for Future:** Prepare students for future life.
- **Social Responsibility:** Cultivate students as social workers, enabling them to achieve a high status in society.
- **Communication Skills:** Promote communicative skills in students.
- **Life Skills:** Develop life skills in students.

In essence, the educational or instructional goal is to cultivate or enhance a capability in students that allows them to fulfill their life's purpose. To achieve this purpose, we break down our goal into several objectives. By achieving each objective, we move towards our ultimate goal.

## **Instructional Objectives**

### **Meaning of Instructional Objectives**

For a society or nation to progress, it must rely on education, which enables the new generation to connect with and uphold the values, culture, and traditions of their society. Education and teaching fulfill this purpose. Every subject, topic, and discipline in education highlights a specific objective and contributes to achieving the broader goals of education. This indicates that to achieve an educational goal, we establish multiple objectives and reach our set goal by achieving each one. It is essential for a teacher to understand this clearly. All educational objectives are based on the structure of the subject, which guides students towards mental, physical, and emotional growth and development.

### **Importance of Instructional Objectives**

In today's era, the use of modern science and technology in teaching is common. Since we aim to achieve our set goals and objectives through teaching, which are connected not only to our daily lives but also to our future lives, understanding the importance of educational objectives is crucial. This helps us easily promote necessary values, traditions, trends, and skills in students. Therefore, it is vital for teachers to have a clear understanding of the concepts, characteristics, and skills we aim to develop in students. Additionally, it is important to identify the principles, facts, values, traditions, and trends we wish to instill in students to ensure their

complete development. All these objectives collectively guide us towards achieving our instructional and educational goals. Below are some examples of objectives:

- Objectives are general statements for an instructional process that provide direction to the educational process. (Wilson 2004)
- Objectives are divided into various aims and achieved, and several objectives together achieve a goal.
- Objectives foster creative and critical thinking in students.
- Objectives promote scientific and technical knowledge.

### Comparison of Educational and Instructional Objectives

Educational Objectives	Instructional Objectives
<b>Source:</b> Educational objectives are specific and related to the performance of the educational system, schools, and society.	<b>Source:</b> Instructional objectives are concise and clear, related to the instructional process at the classroom level.
<b>Basis:</b> Educational objectives are based on educational philosophy	<b>Basis:</b> Instructional objectives are based on principles of psychology
<b>Duration:</b> Educational objectives are achieved over the long term	<b>Duration:</b> Instructional objectives can be achieved after classroom instruction.
<b>Scope:</b> Educational objectives encompass the entire educational process	<b>Scope:</b> Instructional objectives revolve around the subject matter.
<b>Inclusion:</b> Educational objectives include instructional objectives.	<b>Inclusion:</b> Instructional objectives are essentially components of educational objectives
<b>Focus:</b> Educational objectives are determined by society, political parties, and boards to clarify the practical aspect of future preparation.	<b>Focus:</b> Instructional objectives include information, skills, application, and student interest.

## Check Your Progress

1. State the objectives of instruction.
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### 3.3 Bloom's Taxonomy of Educational Objectives

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In 1956, B.S. Bloom and his colleagues proposed a classification of educational objectives which consists of three domains:

1. **Cognitive Domain:** Related to the mind, such as knowledge, comprehension, application, analysis, synthesis, and evaluation.
2. **Affective Domain:** Related to human emotions, feelings, and interests, such as receiving, responding, valuing, organizing, and characterizing.
3. **Psychomotor Domain:** Related to physical activities and bodily functions, such as basic movements, complex movements, and physical skills.

#### 3.3.1 Different Domains of Instructional Objectives (Cognitive Domain, Affective Domain, Psychomotor Domain)

1. **Cognitive Domain:**
  - Classification from lower to higher levels: Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation.
2. **Affective Domain:**
  - Classification from lower to higher levels: Receiving, Responding, Valuing, Organizing, Characterizing.
3. **Psychomotor Domain:**
  - Classification from lower to higher levels: Imitation, Manipulation, Precision, Articulation, Naturalization.

Bloom's taxonomy provides teachers with a comprehensive path to achieve instructional objectives, including observing the learning process of students and forming instructional strategies based on this classification

**(Domains of Instructional Objectives)**

نفسیاتی یا حسی حرکتی علاقہ <b>Psychomotor Domain</b>	جذباتی علاقہ <b>Affective Domain</b>	ذہنی علاقہ <b>Cognitive Domain</b>
نقل کرنا (Imitation)	قبول کرنا (Receiving)	معلومات (Knowledge)
دست کاری کی مہارت (Manipulation)	رد عمل (Responding)	تفہیم (comprehension)
درستگی کا ساتھ (Precision)	آقادت (Valuing)	اطلاق (Application)
ادائیگی (Articulation)	مصوری (Conceptualization)	تجزیہ (Analysis)
ہم آہنگی (Coordination)	تنظیم (Organization)	ترکیب (Synthesis)
عادات کی پختگی (Habit Formation)	امتیازی خصوصیات (Characterization)	تعیین قدر (Evaluation)

**1. Cognitive Domain :** In 1956, Benjamin S. Bloom introduced the first domain in his taxonomy of educational objectives, called the Cognitive Domain. This domain includes six levels that progress from lower to higher levels of cognitive abilities. The Cognitive Domain focuses on the development, enhancement, and identification of students' mental and intellectual skills. Educational and instructional objectives are derived based on students' cognitive abilities, aiming to achieve learning outcomes through teaching content.

**Six Levels of the Cognitive Domain**

**1. Knowledge:**

- Knowledge involves recalling previously learned information and being able to present it when needed. It is the lowest level of cognitive ability, forming the basis for further learning experiences.
- **Examples:** Students should be able to:
  - Remember the lesson content.
  - Recite the lesson.
  - Recognize learned concepts.
  - Develop mental skills.



## 2. **Comprehension:**

- Comprehension is the second level in the Cognitive Domain, aiming to develop students' ability to understand the meaning and interpretation of the material. This includes grasping the underlying concepts, facts, and principles.
- **Examples:** Students should be able to:
  - Explain with examples.
  - State reasons.
  - Classify information.
  - Make estimations.
  - Interpret information.

## 3. **Application:**

- Application involves using learned knowledge in practical, real-life situations. This level requires students to apply what they have understood in new contexts.
- **Examples:** Students should be able to:
  - Demonstrate learned knowledge.
  - Draw conclusions based on observations.
  - Understand relationships between actions and reactions.
  - Predict outcomes based on knowledge.

## 4. **Analysis:**

- Analysis means breaking down material into meaningful components to understand its structure and concepts clearly.
- **Examples:** Students should be able to:
  - Analyze elements within a lesson.
  - Establish relationships between elements.
  - Form new principles.
  - Differentiate and compare facts.

## 5. **Synthesis:**

- Synthesis involves combining smaller units of information to organize and structure material meaningfully.
- **Examples:** Students should be able to:
  - Organize various elements of a lesson uniquely.
  - Create new plans by combining different elements.

- Establish relationships between theoretical and practical experiences.
- Derive principles based on arguments and experiences.

#### 6. **Evaluation:**

- Evaluation enables students to measure and assess the value of the material. It is the highest level in the Cognitive Domain, involving judgment and critical thinking.
- **Examples:** Students should be able to:
  - Make internal and external judgments about material.
  - Measure, estimate, and make final decisions about the internal process of presenting the lesson.
  - Assess, evaluate, and make decisions about the external process of different stages of the lesson.

These levels provide a structured approach to achieving educational objectives and assessing students' cognitive abilities effectively.

### **2. Affective Domain**

This is the second domain in Bloom's taxonomy, presented by Bloom, Krathwohl, and Masia in 1964. Its purpose was to understand and clarify students' affective interests. The affective domain is based on students' feelings and emotions. It includes students' interests, preferences, social and personal values, likes and dislikes, beliefs, which influence a person and to some extent shape their personality. This domain is closely related to emotional attachment. Through this domain, the ability to relate to emotions and feelings is developed. This domain is also further divided into six different levels, which we are detailing below:

- **Receiving:** Any person will be ready to acquire new information only when their abilities, interests, emotions, and feelings confirm it, otherwise, the teaching process will be in vain. Actions in this category include listening, accepting, preferring, choosing, focusing attention, and acquiring.

- **Responding:** This action demonstrates a person's ability to respond or react. This ability is based on students' preferences and emotional actions. Any student will only respond when their abilities and preferences are involved. Common actions of this ability include answering, speaking, listening, benefiting, modeling, and writing.

- **Valuing:** This level of the affective domain tells us about establishing the ability to adopt and use a person's specific qualities and principles. Actions of this ability include influencing, including, suggesting, deciding, participating, accepting, etc.

- **Conceptualization:** This level of the affective domain attempts to clarify the style of thinking present in students. A person imagines the solution to a problem based on their interests, abilities, and preferences. Actions of this domain include differentiating, establishing relationships, demonstrating, suggesting, comparing, etc.

- **Organization:** This ability of the affective domain is related to the development and promotion of certain special qualities in a person. Actions of this ability include organizing, explaining relationships, choosing, specifying, estimating, planning, etc.

- **Characterization:** This is the highest level of the affective domain's objectives. As a student reaches this level, they become familiar with interests, preferences, likes, and dislikes very well, and all their actions are promoted by these abilities, and their personality is recognized by these elements. Common actions of this ability include reconsideration, change, achievement, demonstration, recognition, benefitting, etc.

### **3. Psychomotor Domain**

The term "psychomotor" refers to activities involving both psychological and physical aspects. It directly relates to practical tasks and actions. For example, developing habits through repeated physical exercises like typing, drawing, painting, etc. It is understood that if someone is psychologically prepared to perform a task, they will also be mentally prepared, and the task will be completed successfully. The psychomotor domain is also further divided into six areas, which we are detailing below:

- **Imitation:** At this level of the psychomotor domain, students are engaged in imitating or repeating actions and practicing skills to establish habits and gain proficiency in a particular activity.

- **Manipulation:** At this level, students understand the relationships between two objects and attempt to change or manipulate them, using observations and their intellect to create new connections between objects and develop the ability to manipulate them.

- **Precision:** After achieving the previous two levels, which involve repeated practice and observation, there comes a point where the student achieves precision in the task. Precision is recognized as a skill in any task, and the student acquires this skill at this level.

- **Articulation:** At this level, the student adds new perspectives to their learned knowledge, sometimes by establishing new sequences or by explaining the relationship between one task and another, thus developing the ability to innovate in that task.

- **Coordination:** At this level, the student understands all the elements of a task very well, coordinates them efficiently, attempts to make changes where needed, and strives to explain the relationship between all elements.

- **Habit Formation or Naturalization:** This is the highest level of the psychomotor domain. As the student progresses through this level, they feel much more comfortable and at ease, become proficient in a particular task, and find it very easy to perform without facing any difficulties or challenges. This indicates that the student has become an expert in that task.

The classification of teaching objectives by Bloom into these three areas clarifies that when a student learns something new, the teaching is not just about gaining skill in one area. You can see that most objectives are interconnected, and all three areas are essential and crucial for achieving educational objectives. For example, a student acquiring an experience through a teaching material will require skills from all three domains. They will need cognitive skills to grasp the educational content, affective skills to develop curiosity and interest in the activity, and psychomotor skills to learn the experience correctly using fingers and hands. Based on these reasons, all three areas are included in Bloom's taxonomy to ensure that students can acquire skills from all theoretical and experimental aspects of the material, and this work can be done well under the supervision and guidance of a skilled teacher.

**Check Your Progress:**

1. Explain one of the three areas classified by Bloom's taxonomy of educational objectives.
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### **3.4 Meaning of Classroom Management and Organization**

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Classroom management and organization plays a crucial role in educational and teaching practices. Imagine stepping into a classroom where students are making paper airplanes, running around between desks, and making noise. In such an environment, how would you deliver a lesson when your voice can't even reach the students due to the noise? Classroom management is

essential to ensure smooth teaching and learning processes. Discipline is crucial, and any physical, emotional, or mental violence is unacceptable. So, what do you do in such situations?

Classroom management is a term used to describe the system and organization of teaching to complete the educational process smoothly, ensuring that "teaching is happening in the classroom without any disruption." Teaching is a challenging task, and if classroom management is not right or there are difficulties in the system and discipline, the teaching process becomes impossible. Such situations often lead to teachers leaving the profession. According to a study by the US National Education Association in 1981, 36% of teachers do not want to re-adopt the teaching profession due to flaws in classroom management, with students' negative attitudes and difficulties in discipline being the main reasons.

However, students are not solely responsible for the flaws in classroom management. Several other stakeholders contribute to this issue:

**Teachers:** Some teachers are also responsible for flaws in classroom management. Research shows that 20% of teachers do not do justice to their profession, mainly due to their lack of professional skills. Additionally, some teachers fail to adapt to changes in their subjects and often lag behind, unable to keep up with new techniques. Some teachers find it challenging to remain fair to their profession due to personal difficulties and the dream of becoming rich quickly, leading them to try their luck in other professions. Despite these challenging circumstances, some teachers continue to love and engage with their profession, striving to make the teaching experience enjoyable.

**Administrators:** School administrators and government officials are also responsible for flaws in classroom management. Flaws in policies and planning, inadequate resources in schools and colleges, lack of human and non-human resources, and transferring teachers to other official tasks impact classroom management negatively.

**Curriculum:** Old subjects are often taught in old ways, which may develop logical and philosophical thinking but do not enable students to acquire professional skills. Each subject is related to some profession, and all the skills of each subject are essential for students. These skills can only be developed through effective teaching.

**School Environment:** External interference in schools, noise pollution, lack of facilities such as water and air, and other factors negatively affect teaching. Additionally, not adhering to rules and regulations, not monitoring educational standards, lack of coordination between teachers and students, and poor relationships all contribute to flaws in classroom management.

All of the above issues are related to classroom management and organization, which are crucial for the success of all teaching and learning activities in the classroom. By eliminating all the aforementioned teaching obstacles, we can establish students' social norms and educational activities in the classroom and ensure effective organization along with classroom management.

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### **3.5 Role of Teacher in Classroom Management and Organization**

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In the entire process of teaching, a teacher plays a very important role. Since a teacher is the most important part of education and teaching, it is the teachers who strive to achieve educational objectives, which promotes the complete development of students' personalities. Therefore, it is the responsibility of the teacher to achieve this goal of teaching.

In the modern era, the most important position in educational elements and environment is provided to students. To teach any subject, it is necessary to identify the strengths and weaknesses of the teacher of that subject. Teaching qualities for every subject must be clarified, which are related to educational qualifications, professional skills, and practical actions. These qualities are linked to educational abilities, professional skills, and practical actions. A teacher must possess the following qualities:

i. **Academic Qualifications:** It is essential for a teacher to be an expert in their subject, for which they must graduate or postgraduate in that subject. They should have a good knowledge of the subject, with a grasp on the teaching tools, theories, and experiments of that subject so that they can provide effective lessons at secondary and higher secondary levels.

ii. **Professional Qualifications:** A teacher should also have professional qualifications, enabling them to acquire the following teaching skills:

- Knowledge of teaching methods related to the subject.
- Competence in using practical experiences and utilizing the laboratory.
- Knowledge of organizing various non-academic activities related to the subject, such as school life skills, educational tours, museums, and exhibitions.
- Knowledge of using teaching aids and maintaining their usage.
- Ability to prepare and use teaching materials.
- Skills in lesson planning, unit planning, and preparation of lesson plans.
- Knowledge of continuous and comprehensive evaluation (CCE) for regular assessment.

iii. **General Competencies of a Teacher:** Along with the aforementioned qualifications, a teacher must possess all the following qualities:

- Truthfulness and honesty, enthusiasm, passion for teaching, self-confidence, democratic outlook, hard work, love and compassion for students.

iv. **Special Competencies of a Teacher:** A subject teacher must have some special competencies:

- Correct theoretical, experimental, and practical knowledge of the subject and its content.
- Knowledge of the practical application of subject content and materials.
- Awareness of changes and societal values related to the subject and its content.
- Enthusiasm for lesson planning and use of teaching aids.
- Skills in motivating and empowering students.
- Skills in guiding and counseling students.
- Ability to engage in interactive discussions and questioning with students in a democratic manner.

In addition to the above-mentioned teacher qualifications, teachers must also have the ability to understand and use modern techniques and teaching tools, strategies, methods, and practical wisdom in teaching. Only then can a teacher establish order and discipline while teaching.

Below are some practical wisdom and techniques proven through research, which teachers should understand and use during their lessons:

- Not presenting exemplary behavior or character: Teachers should strive to demonstrate behavior that they want to see in students, such as speaking politely, establishing relationships with all students, providing students with ample opportunity to speak and listen, and providing respect to students. Explain the subjects with examples.
- Upholding school rules and regulations: Encourage students to adhere to school rules and regulations, and seek their assistance in establishing them.
- Avoiding physical, mental, and emotional abuse of students: As a teacher, refrain from punishing students entirely, as it will spoil your relationship with them. If a student deserves punishment, talk to them separately, contact their parents, and educate them about the importance of education.

- Promoting positive behavior: Involve students in teaching, encourage questions, give prominence to examples and experiences related to the subject to overcome difficulties, provide immediate access, write good questions asked by students, good performance, and good behavior on the blackboard to encourage students not only to build morale but also to recognize and adopt their self-confidence, principles, and values.
- Use of gestures: During teaching, if you use gestures, you are establishing a relationship with students in two ways at the same time. Through the language of voices and through other languages of gestures, teachers should use gestures during teaching. If a student is doing irrelevant activities during the lesson, stop them with gestures, invite them to listen to signals, and encourage them to pay attention. Gestures keep students focused on the lesson.
- Organize any function in the school for the performance and achievements of students, whether they are academic, sports-related, or related to social activities. Appreciations should be given to all students. This is a positive technique to empower and assist students.
- While presenting the content of teaching subjects, emphasize its importance and usefulness, and also generate enthusiasm among students regarding the content. Additionally, allocate separate time for quiet students and arrange various activities to address their difficulties.
- Organize different groups of students in teaching to manage educational activities, projects, household chores, etc.
- Make an effort to get to know all students closely by engaging in conversations, discussions, guidance, and counseling.
- By using the above techniques, we can establish order and discipline along with organization and structure during teaching in the classroom.

### **Check Your Progress:**

1. Explain the role of the teacher in organizing and organizing in the classroom.
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## 3.6 Learning Outcomes

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After studying this Unit, you should have learned the following points:

- The importance and utility of education are crucial for any society. Aristotle clarified this by stating, "An educated person is to an uneducated person as a living person is to a dead person."
- Education is a purposeful action whose objectives are achieved through teaching, and teaching is an action that has been prevalent since the beginning of human civilization.
- Educational objectives refer to the changes brought about in the roles and habits of students through educational and acquisition factors, achieving specific educational goals, and measuring the changes observed in students through observation.
- Bloom's taxonomy of objectives is divided into three domains that encompass instructional objectives and factors.

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## 3.7 Glossary

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**Coordination:** Establishing or harmonizing a relationship between two things.

**Classroom organization:** Organizing the teaching environment of a classroom or class.

**Classroom management:** The interaction between teachers and students in the classroom.

**Administrators:** Members responsible for organizing the school.

**Cognitive domain:** Abilities related to the mind.

**Affective domain:** Emotions, interests, and attitudes based.

**Psychomotor domain:** Based on physical skills.

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## 3.8 Unit End Exercises

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### Objective Questions

1. What can teaching objectives be achieved in? (a) A sufficient time (b) A specified time (c) Never (d) There is no time limit
2. How can a teacher measure changes in students' behaviors and habits? (a) From objectives (b) From students' actions (c) From purposes (d) From school records

3. What are the objectives that encompass complete educational action called? (a) Teaching objectives (b) General objectives (c) Educational objectives (d) Specific objectives
4. When did Bloom introduce the first classification of educational objectives? (a) 1956 (b) 1966 (c) 1957 (d) 2001
5. Which area does Bloom's taxonomy of analysis relate to? (a) Cognitive domain (b) Affective domain (c) Psychomotor domain (d) None of the above

### **Short Answer Questions**

1. What objectives does a teacher achieve in the classroom and how are they established?
2. Explain the meaning of teaching objectives and clarify their importance.
3. Describe the classification of all three areas of Bloom's taxonomy.
4. Explain Bloom's objectives in terms of higher-order thinking.
5. Clarify the difference between goals and objectives.

### **Long Answer Questions**

1. Explain Bloom's taxonomy of objectives with clarity and elucidate the actions associated with the cognitive domain.
2. Clarify the characteristics of a teacher in terms of general, specific, and professional abilities.

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## **3.9 Suggested Learning Resources**

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## **Unit 4: Teaching as a Profession and Professional Development of Teachers**

### **Structure**

**4.0** Introduction

**4.1** Objectives

**4.2** Teaching as a Profession: Meaning and Definition

**4.3** Skills and Competencies Required for a Teacher

**4.4** Professional Ethics for Teachers

**4.5** Teacher Professional Development

**4.5.1** Concept of Professional Development of Teachers

**4.5.2** Factors Influencing Professional Development of Teachers

**4.5.3** Factors Fostering Teacher Professional Development

**4.6** Approaches to Professional Development of Teachers

**4.7** Learning Outcome

**4.8** Glossary

**4.9** Unit End Exercises

**4.10** Suggested Learning Resources

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### **4.0 Introduction**

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Teaching is a profession that holds a prominent position not only in Islam but in every religion and society. Allah has mentioned the role of a teacher in the Quran, and Prophet Muhammad (PBUH) himself has said, "I was sent as a teacher." People choose different professions according to their preferences, desires, and plans for their livelihood. Forced occupation or coercion does not yield desirable results. A person either naturally possesses the abilities required for a profession or, after entering a profession, demonstrates commitment to it by utilizing their skills, qualifications, and talents for the betterment of themselves, their students, their family, society, and the country. History testifies that the nations that have honored teachers and the teaching profession have excelled in the world. Respect and dignity for teachers are not only available to the leaders and prime ministers of those countries but are also accessible to their entire population. The reason behind this is the commitment of a teacher who selflessly contributes to the progress and development of themselves, their students, their family, society,

and the country. In this context, this unit will assist you in progressing and promoting as a teacher. It elucidates the concept of teaching as a profession, the diverse roles and actions of a teacher, the importance of required skills and competencies, and the concept of professional development for teachers. The factors influencing professional development and approaches to professional development for teachers are also discussed. It is hoped that you will apply all this information in your professional life as a teacher.

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## **4.1 Objectives**

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After studying this Unit, you will be able to:

- explain the meaning and concept of teaching as a profession
- describe the importance of the teaching profession
- list the diverse roles and actions of a teacher
- indicate the standards of professional ethics for teachers
- clarify the concept of professional development for teachers
- identify the factors influencing professional development for teachers
- compare different approaches to professional development for teachers

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## **4.2 Teaching as Profession: Meaning and Definition**

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Teaching is a purposeful process of facilitating a learner's acquisition of knowledge through a teacher. Through this process, the teacher strives to meet the educational needs of both the individual and society. Teaching involves the specific application of knowledge, skills, qualities, and capacities. This process not only smooths the path for achieving curriculum objectives but also aims to develop the learner's values, to make them a better citizen, and to cultivate the qualities that enable them to become an active member of society. A useful member of society strengthens and develops the community. The process of teaching fosters qualities like self-concept, self-confidence, self-awareness, adaptability, and self-respect in students. Teaching is regarded as both an art and a science.

The word "Teacher" contains "Teach" within it, implying the teacher's integral role in teaching. Teaching is also a profession through which one earns a livelihood. Like a doctor, it is a significant profession considered devoted to serving humanity. Just as a doctor diagnoses and

treats a patient's illness, a teacher brings about changes in a student's awareness and behavior through educational skills and techniques. Teaching facilitates complex social, cultural, and ethical processes within a social and cultural context. The profession of teaching is one of the oldest in the world and is undoubtedly the most magnificent. In ancient times, teachers, mentors, or gurus not only enjoyed the patronage and respect of the state and rulers but were also revered. Teachers like Socrates and Vishnu Sharma played a key role in shaping the minds and morals of young people. Fundamentally, all prophets, regardless of their professions, were teachers, and their role is described in the Quran as "conveying the message of God to mankind" (Quran 14:4). Prophet Muhammad (PBUH) was a great teacher whose disciples were ordinary people. He taught them through various methods and strategies. It is significant that people of that time belonged to diverse classes, and he taught in both hostile and favorable environments. Though this was a personal endeavor at that time, and the profession was not yet organized, over time, revolutionary changes occurred in modern teaching. Skills and competence became its foundational criteria. A teacher must not only ensure their competence but also find time to continuously enhance their knowledge and maintain a desire for learning. "The best teacher is one who is always learning."

Teaching is considered the profession of all professions and is recognized as a sacred vocation dedicated to the service and welfare of humanity. It is one of the best ways to cultivate critical thinking among citizens and workers. The teacher occupies the central stage in the grand opera of learning, which is played out almost daily in every classroom. The teaching profession guides the new generation toward progress. The person who performs this profession well is called a teacher. This is a group that remains passionate about teaching as well as self-improvement and further learning. They are active learners who know the art of transferring their knowledge, experiences, and skills to other members of society. Before entering this profession, a teacher acquires essential qualifications and credentials. They gain expertise and proficiency in how to engage students in the learning process within the classroom, a process based on the following stages:

**Input -----Process-----Output**

**Intake (Applied Effort or Power) Process (Output) Outcome**

In this regard, the ultimate goal of a teacher is to enable students to comprehend the subject matter. The significance of the teaching profession is evident from its job requirements. Key elements include specialized skills, strong interpersonal understanding and skills,

adaptability, and a learning mindset. To establish their values, a teacher makes plans. In this process, they utilize various resources besides textbooks, such as reference books, dICTIONARIES, encyclopedias, newspapers, magazines, journals, and the internet, to satisfy the students' curiosity. Professor A.M. Carr-Saunders defines the profession as follows:

"A little reflection reveals that what we now call a profession emerges when a large number of people, after receiving special training, are available. Thus, a profession relies on specialized intellectual study and training. Its purpose is to provide skilled individuals who offer their services and advice for a specific fee or salary." It is important to clarify here that the payment of a fee or salary is not the only attribute of a profession.

Alexander Flexner outlined six criteria for a profession, to which Liberman added two more to complete the list:

- primarily involves intellectual activities.
  - It derives its input (raw materials) from science and learning.
  - It translates content into practical, accurate, and definitive outcomes.
  - It possesses educational communication techniques.
  - It tends toward self-organization and management.
  - Practitioners increasingly become selfless and altruistic.
  - It provides broad autonomy and scope of work for both individual practitioners and the professional group as a whole.
- It offers extensive personal responsibility for decisions and actions taken within the professional domain, forming a system of "Auto-Censorship."

### **Importance of Teaching Profession:**

The teaching profession is related to the work of teaching. A profession can be described as a job. Education and training are required for the teaching process. Certain skills are necessary to effectively perform any task. A specific set of skills is required for a particular job. "Teaching as a profession means that a candidate who has joined teaching should take this work as a profession." The teaching profession is the power that builds and shapes the future of the country. It defines our educational system with the help of the teacher. The teacher possesses the following abilities and competencies in their profession:

- Authority
- Competence

- Initiative
- Decisiveness
- Drama
- Preserving
- Humour
- Energy
- Tolerant
- Enthusiasm
- Humanity
- Virtuous
- Imagination
- Unbiased
- Yoke
- Integrity
- Xavier (enlightenment)
- Loyalty
- Responsibility
- Zealous
- Self-Control

The above-mentioned qualities are required to give a society and community a better and stronger shape. When a teacher joins the teaching profession, they emerge as a leader. History is witness that the countries with the best teachers have always shone on the horizon of development. Thus, we can write the following characteristics of the teaching profession:

- Easy Communication
- Self Organization
- Training of Teaching Skills
- Systematic Knowledge
- Intellectual Operation
- Autonomy
- Science of Teaching
- Practical Training
- Sense of Service



- Commitment
- Confidence
- Trustworthy
- Respect
- Conceptual Thinking

### **Role and Duties of Teacher:**

According to George Bernard Shaw, “The best of us are teachers; the rest can go wherever they want.” A teacher not only acquaints their students with reality or conveys information but also nurtures them as complete individuals and citizens. They instill personal thought, reasoning, critical thinking, and positive ideas in their students. These are the seeds that eventually grow into valuable and robust trees. Teachers in a country have the power to nurture these trees like a gardener. Shaping personalities is the duty of these great individuals as they interact with diverse students in the classroom. On one hand, they are friends to the children, and on the other, they play the role of parents by teaching various values and discipline. They teach students to face problems and guide them through life's challenges. They encourage success and motivate them to work hard in the face of failure. A teacher works diligently and prepares thoroughly to provide quality education. They can be a leader at times and a helper at other times. Just as a serious leader is needed to successfully run a political system, good and quality teachers are needed to improve the educational system. A teacher is the driving force of the educational process. They embody love; Dr. Zakir Hussain writes:

"A teacher's book of life should have love as its title on the cover instead of knowledge."

Thus, a teacher is a complex combination of roles that change according to society, country, education level, and types of schools. Some of these roles and functions are as follows:

- Teaching students discipline and controlling their behavior, caring for them like parents with love and concern.
- Evaluating students' achievements, determining curricula, being a learner and researcher, and participating in various organizations.
- Being a social servant, community leader, agent of social change, and planner of the teaching-learning process.
- Facilitating learning, creating a conducive learning environment, and being a role model and leader for students.
- Solving students' problems, being a mentor, and mediating the learning process.

- Acting as a coach, supervisor, and manager, and instilling ethical, national, and social values.
- Teaching thriftiness in the use of resources, raising environmental awareness, and fostering democratic citizenship and secular minds.
- Identifying students' strengths and weaknesses, creating quality assessments, and informing parents about their children's progress.
- Organizing extracurricular activities, sports, and educational trips, and implementing various government policies.
- Hosting national festivals, meetings in memory of great personalities, seminars, and conferences.

In this way, a teacher performs various duties in schools and society. The primary goal is the development of children. Various educational agencies play their roles in this great task, both formally and informally. A teacher fosters appropriate values, attitudes, interests, beliefs, and skills in students, contributing to their overall development, as well as the progress of society and the country. This is why a teacher is called the builder of the nation.

### **Check Your Progress**

1. Clarify the importance of the teaching profession.
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## **4.3 Skills and Competence Required for Teachers**

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"Teachers are indeed the protectors of the nation, as it is entrusted to them to shape future generations and make them capable of serving the country."

- Allama Iqbal

We know that education is the process that encompasses all aspects of a person's life. It helps make someone a valuable and active member of society. However, this is only possible when there is a "teacher" present to guide students on the path of knowledge. Imam Abu Hanifa, when asked by his esteemed student Imam Abu Yusuf, said about the teacher, "When a teacher is teaching children, observe closely. If he teaches as if he is teaching his own children, then he is a teacher. If he teaches considering them as other people's children, then he is not a teacher."

To become a teacher, one must obtain a specific certification that allows them to join this profession. Besides this, it is also essential to be equipped with minimum knowledge and skills. The standards for this vary according to the government, the type of school, and the level of the school. In some places, having a degree in a training course along with graduation is mandatory. NEP 2020 has further facilitated this process by linking the duration and level of the courses with graduation. These courses promote the necessary skills and capabilities in a teacher, which they use in their teaching field. In our country, passing a qualifying exam is mandatory for the appointment of teachers in government schools, which measures basic skills such as reading, writing, mathematics, logic, and professional ethics. These are the skills and capabilities that facilitate a teacher's daily tasks. Beyond school, at the higher education (college) level, having NET or a Ph.D. is mandatory for a teacher's appointment.

In the current era, which is the age of technology, the use of ICT (Information and Communication Technology) is visible everywhere. It is also necessary for a teacher to stay up-to-date with contemporary trends. In this regard, the use of ICT for teaching and assessment is essential for a teacher. Additionally, the required skills and capabilities are listed for your study:

1. Mastery over subject content
2. Communication skills (writing and speaking)
3. Extensive vocabulary
4. Application of basic techniques in mathematics and statistics
5. Problem-solving skills
6. Maintaining discipline in the classroom
7. Being a great helper and manager
8. Designing and interpreting educational materials
9. Explanation skills
10. Questioning skills
11. Skills in varying motivations
12. Skills in using the blackboard
13. Skills in giving appropriate and relevant examples
14. Introductory skills
15. Experimental skills
16. Skills in creating a conducive learning environment
17. Formulating and determining good lesson plans and objectives

18. Evaluating students
19. Identifying students' needs
20. Teaching values to students
21. Using diverse teaching methods
22. Demonstrating responsibility towards the profession
23. Always striving and ready to learn new information
24. Supportive and helpful
25. Facilitative
26. Simplifier
27. Assistant
28. Advisor and guide
29. Team leader, manager, decision-maker
30. Supervisor
31. Innovative, creative
32. Researcher
33. Engaging students according to their abilities
34. Critical and focused thinker
35. Patience
36. Compassionate
37. Enthusiastic and energetic
38. Encouraging
39. Conducting extracurricular activities
40. Good speaker
41. Good listener
42. Connecting with parents and the community
43. Approachable
44. Sensitive and practical
45. Organized and punctual
46. Just
47. Role model
48. Democratic
49. Of high standards

## 50. Complete personality

Thus, a teacher's personality should be flawless, versatile, and possess multidimensional skills and capabilities so that students can take them as role models and build and shape their own personalities.

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### 4.4 Professional Ethics for a Teacher

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W.H. Kilpatrick presented the following framework for teacher education:

Teacher Education = Teaching Skills + Educational Competence + Professional Skills

**Teaching Skills:** This includes training and practice in the field of teaching. With this foundation, a teacher becomes capable of effective planning and delivering instruction efficiently in the classroom.

**Educational Competence:** A teacher should be aware of modern and diverse perspectives that enable the social, philosophical, and psychological growth of the learner. These include the skills and capabilities that are essential to make teaching complete and successful.

**Professional Skills:** To develop and sustain the profession, a teacher uses various techniques, strategies, and methods. This applies from the classroom to the school and the broader community, where the teacher strives to create a pleasant, developed, and successful society through dedication and hard work. These skills include counseling, interpersonal skills, soft skills, computer skills, information retrieval, and management skills.

When we carefully examine all these elements, we find that their foundation is ethics. We know that the teacher's personality directly impacts students' lives. Therefore, it is essential for a teacher to have a high and noble standard. They must blend all their skills and capabilities with the essence of duty and ethics. Only then can they shine with a unique personality and dignity in society. Their behavior and conduct should be of the highest standard with colleagues, students' parents, senior officers, community elders, relatives, wealthy individuals, politicians, orphans, disabled people, women, and subordinates.

In this way, we can divide the teacher's professional ethics into the following four areas:

1. Ethical behavior with students
2. Ethics with the profession
3. Ethics with professional colleagues
4. Ethics with parents and the community

**1. Ethical Behavior with Students:** "Read in the name of your Lord who created, created man from a clot. Read, and your Lord is the most generous, who taught by the pen, taught man what he did not know."

This is the method of teaching. When Allah described Himself as a teacher, He also mentioned teaching with the pen, implying the use of a medium and reason for education. Therefore, it is essential for a teacher to understand the intricacies of their profession and use beneficial means and ethics to impart as much knowledge as possible to students. Parents trust a teacher and entrust their child (whether they are sensible, rebellious, balanced, or unbalanced), their most precious possession, to you with great confidence. It is your responsibility to shape, polish, and make them successful in life, which is only possible when you are trustworthy and handle the student's time and life as a trust, presenting your accountability with high standards on the Day of Judgment. The following points and principles provide guidance for teachers regarding ethical behavior with students:

- A teacher should address students' issues effectively and fairly in light of the law and school policy.
- A teacher should not expose students' faults with the intent of humiliation or disgrace.
- A teacher should not reveal students' confidential personal information unless required by law.
- A teacher should make every effort to protect students from harmful situations.
- A teacher should present information and facts about students without bias or distortion.
- A teacher should avoid obscene, vulgar, and inappropriate behavior and speech in front of students.

**ii. Ethics with the Profession:** A teacher should adhere to the following principles in their professional conduct:

- A teacher should accept responsibility according to their qualifications and position, and act in accordance with the terms of their appointment.
- They should maintain the dignity of the profession while respecting the country and its laws.
- They should continuously learn new knowledge and skills, and strive for their professional development.

- They should not misrepresent institutional and governmental policies and should clearly express their personal opinions.
- They should honestly account for all funds and resources related to money and materials.
- They should not use institutional facilities for personal gain.
- They should perform their duties regularly and punctually.
- They should comply with all lawful orders from their superiors.

**iii. Ethics with Professional Colleagues:** A teacher should interact with their colleagues in the following manner:

- They should not engage in gossip or backbiting about their colleagues.
- They should not disclose confidential information about their colleagues unless legally required.
- They should not spread mistrust about their institution and colleagues.
- They should not interfere in their colleagues' personal matters.
- They should provide measures to counter elements and fronts that threaten professional integrity.
- They should make every effort to help resolve their colleagues' issues.

**iv. Ethics with Parents and the Community:** A teacher should always maintain communication with students' parents and the community and conduct themselves in the following ways:

- They should try to obtain all relevant information about the child from the parents in the interest of the student.
- They should respect the diverse values, traditions, beliefs, and cultures of the community in the classroom.
- They should actively work to improve the relationship between the school and the community.
- They should treat students' parents and other community members with kindness, respect, and honor

When we look back at the past or search for the foundation of societal progress in the present, the result is the same. The progress of society appears to be directly or indirectly linked to the educational and technical abilities of the teachers in that country. "The intellectual stagnation of teachers renders the educational system lifeless and meaningless."

The above statement points out that if the educational and technical capabilities of teachers are not developed, we cannot meet the contemporary demands of the nation. Just as we saw in the previous section, no nation can embark on the journey of progress without ethical development. In today's era, where change seems to occur at lightning speed, where there is an explosion of knowledge, a student benefits more from informal educational activities than formal education. In such an environment, it is essential for teachers to be equipped with more knowledge and skills than the students. The curiosity of students in the classroom can only be maintained if the teacher's teaching is innovative, unique, and logical. Therefore, a teacher should always strive for their professional development. The professional development of teachers is crucial in keeping the educational system vibrant, purposeful, and capable of fulfilling the aspirations of the nation and community. "The modern construction of the nation and country in the hands of teachers devoid of contemporary demands certainly seems impossible."

To keep pace with the changing times, it is necessary for teachers to be adorned with teaching skills and abilities. A teacher who does not lag in availing of resources and opportunities for educational and technical growth leaves a profound impact on the process of teaching and learning. This brings both excellence and beauty to the teaching profession, providing the nation and country with new perspectives, towers of thought, and new paths to progress. Research confirms that a teacher who possesses the latest and modern information and can motivate students is the most significant element in the school that affects students' achievements. Therefore, special attention needs to be given to the training and support of both new and experienced teachers. Thus, the continuous effort of the teacher and never-ending honesty, interest, and hard work towards their profession should be valued. Alongside this, teachers should receive continuous guidance, mentoring, and support in developing their teaching and technical skills and professional growth. Only then can they contribute to the construction and development of the country.

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## **4.5 Teacher Professional Development**

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### **4.5.1 Concept of Professional Development of Teachers**

Professional development refers to various and extensive special training programs, formal education, and modern professional learning that provide opportunities for education



administrators, teachers, and teacher educators to improve their professional knowledge, capabilities, and effectiveness.

Practically, the framework of professional development and the topics included under it are very broad. Financial support for this is provided by state or central governments, districts or cities, school management, or non-governmental organizations. The duration of these programs ranges from one day to four weeks and is conducted both during school hours and vacations. Besides the institution, the services of renowned teachers are also taken in the form of resource persons. Thus, the education system authorities should not be negligent in promoting contemporary educational theories among teachers and should instill a passion for the development of educational and technical skills in them. "Personal and professional growth are interconnected. If either is neglected, the other also suffers. However, by focusing on both, teachers can ensure a healthy and prosperous teaching career." —Education Expert Linda Showlave

#### **4.5.2 Factors Influencing Professional Development of Teachers**

Programs aimed at the professional development of teachers are often student-focused. However, such programs do not significantly impact the professional growth of teachers. This may be due to shortcomings in their successful implementation or various disruptive factors. Here are those factors:

1. **Failure to Identify Teachers' Needs:** Not all teachers receive equal opportunities for professional development.
2. **Lack of Teacher Involvement in Program Planning:** Professional development is not systematically or regularly evaluated.
3. **Unsatisfactory Implementation and Results:** A lack of variety in presentation styles within these programs.
4. **Inapplicability of Learned Techniques and Theories:** Programs not being attuned to the learning characteristics of teachers.
5. **Uniform Programs for All Levels:** Conducting uniform programs for all levels, classes, and student standards, and not aligning with their routines, such as learning principles and teaching practices.
6. **Lack of Dedication and Commitment Among Teachers:** Absence of dedication and responsibility among teachers.

7. **Lack of Support in Classroom Application:** Resistance and negative attitudes among teachers.
8. **One Program for Diverse Teaching Experiences and Levels:** Conducting the same program for teachers with different teaching experiences and levels.
9. **Focus on Certification Rather Than Learning:** Teachers focusing more on obtaining certificates and financial, residential, food, and transportation facilities rather than learning.
10. **Inexperienced Trainers:** Trainers conducting these programs lack experience in training and are themselves untrained.

#### **4.5.3 Factors Fostering Teacher Professional Development**

1. **Awareness of Strengths and Weaknesses:** It is essential for a teacher to be aware of their strengths and weaknesses. Enhancing strengths and understanding weaknesses helps in becoming a better teacher.
2. **Consultation with Other Teachers:** Teachers should improve their teaching and technical skills by consulting with other teachers, accepting healthy ideas with an open heart, and viewing criticism as constructive.
3. **Self-Assessment of Teaching Activities:** Regularly review and evaluate classroom teaching activities with the help of fellow teachers and students.
4. **Strategizing:** Teachers should formulate strategies to improve their teaching activities. Devote more time to studying, staying informed about new ideas, educational experiments, and trends.
5. **Focus on Training:** Focus on training, whether it is self-training or student training, to stay updated with modern teaching methods.
6. **Balancing Responsibilities:** Teachers have responsibilities beyond the classroom. Fulfill these responsibilities in a way that does not negatively impact classroom performance.
7. **Maintaining Good Relations with Fellow Teachers:** Maintain good relationships and camaraderie with fellow teachers. This fosters professional skills through mutual cooperation and the exchange of ideas, trends, and techniques. Many issues within the classroom, school, and community can be resolved through discussion.
8. **Participation in Professional Development Programs:** Teachers should participate enthusiastically and willingly in programs aimed at professional development.

9. **Staying Updated with Modern Educational Theories and Trends:** Stay connected with new and innovative methods.
10. **Regular Reading:** Include reading educational journals, periodicals, and newspapers in your routine.
11. **Utilizing Social Media and the Internet:** Benefit from social media, the internet, and other media sources, as they are very helpful in enhancing professional skills.
12. **Strong Determination:** A teacher should have strong and unwavering determination, which leads to success. Dedication, sincerity, honesty, and selfless service are what make a complete teacher, allowing them to truly serve the nation and community.

### **Check Your Progress**

1. Identify the factors affecting the professional development of teachers.
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## **4.6 Approaches to Professional Development of Teachers**

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A teacher's professional development is a means through which educators can acquire broad theoretical and critical knowledge, and receive guidance. Effective programs for teacher development start with an understanding of their needs, the organizational environment, and an appreciation of their diversity. Various forms of access and techniques are employed to enhance their teaching, provide necessary support, engage school leadership, and ensure the effective use of resources for impact. All these programs keep teachers engaged as active learners. The following are the accessibility modes used for these programs:

<b>Serial No.</b>	<b>Accessibility Mode</b>	<b>Benefits</b>	<b>Limitations</b>
<b>1</b>	Self-directed, guided	Teachers set their own development goals and select supporting activities themselves.	It is imperative for all teachers to possess at least basic skills, so uniform implementation is not always possible. Availability and accessibility of computers

			and the internet are essential. Teachers must be self-motivated and proactive.
<b>2</b>	Mutual assistance	Groups of teachers with expertise in specific subjects or skills collaborate to work towards each other's professional development.	Teachers learn collaboratively. Specialized knowledge and skills can be acquired. Improves teaching effectiveness. Enhances relationships among teachers. Imposes the burden of teaching others on teachers. High proficiency is required among teachers. Not all teachers are equally capable of teaching others.
<b>3</b>	Collaborative	No specific grouping is necessary, nor is it essential for all participating teachers to teach others. Instead, cooperation is provided in a mutually supportive manner.	Fosters innovation and creativity. Responsibilities and tasks are easily and quickly completed through delegation. Enhances the teacher's persona. Generates effective actions. Stronger connections with other members of society and institutions. Different approaches to work can create conflicts. Multiple leaders emerge during action, and everyone tries to intimidate others. Planning such programs is challenging and complex.

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## 4.7 Learning Outcomes

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Upon completion of this Unit, you should have learned the following:

- "Teaching is both an art and a science."
- Teaching is the application of knowledge, skills, attributes, and talents.
- Teaching is considered a profession of the highest order and is recognized as a noble profession dedicated to serving and benefiting humanity. It is one of the best ways to foster critical thinking among citizens and workers.
- Teacher's education = Teaching skills + Educational skills + Professional skills
- Teaching skills: Training and practice in the field of teaching. A teacher becomes capable of presenting teaching in the classroom effectively through proper planning and teaching methods.
- Educational skills: A teacher should be aware from different perspectives to be able to demonstrate the social, philosophical, and psychological dimensions of learners. These are the skills and talents that are essential for the complete and successful teaching.
- Professional skills: To promote and sustain their profession, teachers employ various techniques, practical wisdom, and methods. They interact with society, from the classroom to the school and beyond, using different social networks. The professional ethics of a teacher can be divided into four (4) categories:
  - Ethical behavior in dealings with students.
  - Ethics with the profession.
  - Ethical behavior with professional colleagues.
  - Ethics with parents and society.

"It is undoubtedly impossible for teachers to rebuild the nation and the country's modernization with empty hands from the demands of the times. Therefore, it is essential for teachers to adapt their knowledge and skills to the demands of the times."

"It is necessary for a teacher to be familiar with his strengths and weaknesses. Recognizing strengths and weaknesses helps to become a better teacher. Consult with other teachers to improve teaching and technical skills. Accept others' healthy theories with an open mind. Interpret criticism constructively."

"Teacher's professional development is a means through which educators can acquire broad theoretical and critical knowledge, and receive guidance. Effective programs for teacher development start with an understanding of their needs, the organizational environment, and an appreciation of their diversity."

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## 4.8 Glossary

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**Teaching:** Transfer of educational content to students in a classroom setting by a teacher.

**Profession:** A career path involving commitment to social service, adhering to defined principles and regulations, acquiring specified qualifications and training, and seeking livelihood through it.

**Values:** Preferred and accepted actions in society that bring comfort and constitute part of preferences.

**Guidance:** Assisting someone in a way that enables them to become capable of helping themselves.

**Mediator:** A person who intervenes between two parties to help them reach an agreement or resolve a dispute.

**Achievement:** Marks obtained by students in a subject.

**Standardized Testing:** Formation of an instrument in a specific and scientific manner.

**Competency:** Special ability to perform a task, material.

**Teaching Materials:** Auxiliary tools in teaching and acquisition.

**Morality:** Collection of values of a particular field.

**Professional Development:** Advancing in one's profession by acquiring new knowledge, skills, and talents

**Personal Factors:** Factors directly related to the life of teachers.

**Contextual Factors:** Responsible factors for the development of teachers that are related to circumstances.

**Self-directed, Guided:** Goals, activities, and programs determined by oneself.

**Mutual Assistance:** Collaboratively completing work with interdependence in a group.

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## 4.9 Unit End Exercises

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### Multiple Choice Questions

1. Which approach to professional development focuses on self-reflection and individual growth?
  - (a) Collaborative development
  - (b) Self-directed development
  - (c) In-service training
  - (d) Action research
2. What is the primary goal of teaching as a profession?
  - (a) To provide students with knowledge and skills
  - (b) To earn an income
  - (c) For the long summer vacation
  - (d) For personal satisfaction
3. What is the purpose of exploring various methods for professional development?
  - (a) To identify the most cost-effective methods
  - (b) To adapt to changing educational policies
  - (c) To standardize teaching methods
  - (d) To meet the diverse needs of teachers
4. In professional development, what does peer group collaboration promote?
  - (a) Competition among teachers
  - (b) Individual growth and reflection
  - (c) Sharing best practices
  - (d) Isolation and self-reliance
5. Which of the following is an example of formal professional development for teachers?
  - (a) Attending a conference
  - (b) Reading educational books
  - (c) Engaging in personal reflection
  - (d) Networking with colleagues

### **Short Answer Questions**

1. List the diverse roles and functions of a teacher.
2. List the skills and competencies required for the teaching profession.
3. Identify the standards of professional ethics for teachers.
4. Clarify the concept of professional development for teachers.
5. List the factors that affect the professional development of teachers.
6. List the factors that promote the professional development of teachers.

### **Long Answer Questions**

1. Critically examine the statement "Those of us who are better should become teachers, the rest can go wherever they want" in light of the current educational conditions.
2. Identify the issues in the professional skills and competencies of teachers and suggest measures to address them.
3. Discuss the changes in the standards of professional ethics for teachers.
4. Explain the statement "Personal and professional growth and development are interconnected" with appropriate examples.
5. Discuss the role of governmental and non-governmental organizations in promoting the professional development of teachers.
6. Compare the approaches to the professional development of teachers.

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## **4.10 Suggested Learning Resources**

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1. J. P., & Rana, J. P. (2015). Teacher education and professional development. Discovery Publishing House.
2. Joshi, N. (2017). Teacher Professional Development: A Roadmap for Indian Schools. Bloomsbury Publishing India.
3. Shyam, P. (2019). Conceptualizing teacher professional development: A comparative study. Sage Publications India.
4. Mishra, S. (2015). Professional Development of Teachers: A Study of Teacher Education and Teaching Process. Atlantic Publishers & Dist.
5. Singh, R. K., & Pandey, A. K. (2019). Concept of teaching as a profession. Springer.



6. Manchanda, S., & Sachdeva, R. (2019). Teachers' Professional Development in India: Retrospect and Prospect. Springer.
7. Kumar, N. (2016). Teacher Education and Professional Development. PHI Learning Private Limited.
8. Sood, S., & Sharma, R. (2015). Teacher Professional Development. PHI Learning Private Limited.
9. Banerji, S., & Gupta, R. K. (2015). Teaching as a Profession: Challenges and Opportunities. PHI Learning Private Limited.

## **Unit 5: Meaning, Nature, and Concept of Learning**

### **Structure**

- 5.0** Introduction
- 5.1** Objectives
- 5.2** Definitions of Learning
- 5.3** Concept and Meaning of Learning
- 5.4** Nature and Characteristics of Learning
- 5.5** Theories of Learning
  - 5.5.1** Constructivist Theory of Learning
  - 5.5.2** Behaviourist Theory of Learning
  - 5.5.3** Insightful Theory of Learning
- 5.6** Types of Learning
- 5.7** Learning Outcomes
- 5.8** Glossary
- 5.9** Unit End Exercises
- 5.10** Suggested Learning Resources

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### **5.0 Introduction**

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The concept of human life starts in the womb, i.e., when conception occurs. Through the process of growth, the fertilized egg transforms into a complete human being. During this period, various changes such as physical, mental, and emotional transformations occur. These changes are based on scientific and psychological principles, like the principle of continuity and the theory of individual differences, as well as the theory of learning. Every person born into the world possesses some innate abilities that help them cope with various situations.

This unit is based on an important topic, which is learning. Humans are born with the ability to learn many things, and they continue to learn many more things throughout their lives. Students will gain an understanding of the definition, concept, and nature of learning through this unit. The characteristics of learning will also be discussed. Various theories of learning, such as the Constructivist Theory of Learning, Behaviourist Theory of Learning, and Insightful Theory of Learning, will be reviewed. Finally, the seven types of learning proposed by B.F. Skinner will be discussed in detail to help students understand both the theories and types of learning.

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## 5.1 Objectives

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After studying this Unit, you will be able to:

- define learning
- explain the concept and meaning of learning
- describe the nature and characteristics of learning
- express knowledge about the constructivist theory of learning
- explain the behaviourist theory of learning
- discuss the insightful theory of learning
- describe the types of learning

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## 5.2 Definitions of Learning

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If you ask any common person about learning, they will provide some explanation. However, it is necessary to understand some specific aspects along with the general description. For instance, a human baby is capable of sucking milk from the mother's breast immediately after birth. Such inherited behaviors are considered natural. As the child grows, they adapt to various situations, acquiring different habits, knowledge, behaviors, and skills. This acquisition process is called learning. Learning can be understood as the process of acquiring skills, abilities, or habits to deal with new situations not previously prepared for by nature.

Learning or acquiring knowledge is a complex process. Many attempts have been made to define learning, and some definitions are provided below:

According to the Dictionary of Education: In 1960, Skinner defined learning as: "Learning is a process of progressive behavior adaptation." Learning is the process of adapting progressively to behavior.

Woodworth writes: "The process of acquiring new knowledge and new response is the process of learning." The process of acquiring new knowledge and responses is the process of learning.

According to Crow and Crow: "Learning is the acquisition of habits, knowledge, and attitude." Learning is the acquisition of habits, knowledge, and attitudes.

According to Gates and others: "Learning is the modification of behavior through experience and training." Learning is the modification of behavior through experience and training.

Cronbach wrote: "Learning is shown by a change in behavior as a result of experience." Learning is expressed by a change in behavior as a result of experience.

Guthrie writes in the Psychology of Learning: "The ability to learn, that is to respond differently to a situation because of past response to the situation." Learning is the ability to respond differently to a situation based on past responses.

According to Kingsley & Gray: "Learning is the process by which an organism, in satisfying its motivations, adopts and adjusts its behavior in order to overcome obstacles or barriers." Learning is the process by which an organism adjusts its behavior to overcome obstacles or barriers to satisfy its motivations.

According to Morgan and Gilliland: "Learning is some modification in the behavior of the organism as a result of experience which is retained for at least a certain period of time." Learning is a modification in the behavior of an organism as a result of experience that is retained for at least a certain period of time.

According to Thorndike, E.L.: "Learning is selecting the appropriate response and connecting it with the stimulus." Learning is selecting the appropriate response and connecting it with the stimulus.

Based on the above definitions, the following points can be summarized:

- Learning means changing behavior to achieve a specific goal.
- Learning means developing a method to deal with problems.
- Learning is the process of acquiring new information.
- Learning is the process of exhibiting new responses.
- Learning is the process of changing behavior.
- Learning is a change in behavior through new understanding and activity.
- Learning is the process of adapting to a new environment.

### **Check Your Progress:**

1. Define learning according to one educational expert.
2. \_\_\_\_\_

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### 5.3 Concept and Meaning of Learning

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Although psychologists have provided various definitions of learning, they can all be summarized as follows: Learning is a process that results in a change in behavior due to experience and practice. Every person accumulates new experiences daily, and these experiences contribute to modifications and changes in their behavior. Thus, these experiences and their applications are referred to as learning.

Learning is a broad and significant term. In general terms, learning refers to changes in behavior. However, it is important to note that not all changes in behavior are considered learning. For example, changes due to fatigue or illness caused by food are not considered learning. In psychology, learning refers to changes that occur as a result of practice or experience, often aimed at helping an individual adjust to their environment. Hence, learning is described as a change in behavior resulting from practice or experience.

Learning is an active response to a situation. For instance, a child is born without knowing anything, but as they grow and are exposed to their environment, they start to learn. If the child is raised in a Muslim environment, they learn to greet with "Salam"; if raised in a Hindu environment, they learn to greet with "Namaste"; and if raised in a Sikh environment, they learn to greet with "Sat Sri Akal." This is learning because the child's behavior changes as a result of practice and experience.

Another example can illustrate this further. If we are carrying bread in our hand and a hungry crow sees it, the crow will snatch the bread from our hand. This snatching is a natural reaction to hunger and is not learned behavior. Conversely, if a child sees the bread in our hand, they do not snatch it but instead extend their hand to ask for it. This reaction is not natural but learned. It shows that after birth, a child learns something from their environment. For example, if a child touches a flame for the first time and gets burned, that is an experience. The next time the child sees a flame, their response will be different due to the previous experience, teaching them not to touch the flame. Thus, learning is a change in behavior due to experience.

Most of our behavior is acquired through the learning process. If a behavioral change is temporary and due to maturation, it is not considered learning. Experience is a crucial part of learning. Learned behavior implies relatively permanent changes in behavior. The observation of learning cannot be directly measured but can be inferred through changes in behavior. This is evident from improved performance. Reflecting on your childhood experiences, you can recall

how much practice was needed to learn something, whether it was Urdu or English. Remembering your behavior will reveal that experiences and practice form the foundation of learning, leading to changes in behavior.

### **Check Your Progress**

1. What do you understand by learning? Explain.
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## **5.4 Nature and Characteristics of Learning**

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As mentioned above, learning involves changes in behavior through which an individual acquires knowledge, attitudes, and skills necessary to meet life's essential requirements. Learning is obtained through experience and observation, with parents, neighbors, peers, and teachers serving as key sources. The nature of learning revolves around the following points:

### Nature of Learning

#### i. Learning is a Change in Behavior

In the learning process, an individual's behavior changes. Sometimes there is no change in behavior, which means learning has not occurred. Behavioral changes can be positive and adaptive or negative and maladaptive. For example, learning to cook or ride a bicycle are positive examples, whereas learning to curse or lie are negative changes indicating maladaptive behavior.

#### ii. Change in Learning Occurs as a Result of Practice or Experience

The changes resulting from the learning process occur due to practice or experience. Practice here refers to training where a person repeatedly performs an action, correcting their mistakes and eventually mastering it. Experience refers to sudden or situational experiences that change a person's behavior. For example, a person learning to make a wooden chair naturally learns through training. By making chairs repeatedly and correcting mistakes, they eventually learn to make a chair without errors. Here, the change in behavior is a result of training.

#### iii. Behavioral Change is Relatively Permanent

A relatively permanent change in behavior means that the change lasts for a specific period, which could be days or months. For instance, if a person learns to type, this change in behavior remains relatively permanent for a while. If they do not practice typing for several

months, they may forget how to type, indicating the change was relatively permanent for a few months.

### Characteristics of Learning

Based on the understanding and experience of the concept and nature of learning, its characteristics can be summarized as follows:

**Learning is a Fundamental Process of Life:** Life cannot function nor progress without learning. It is essential for civilization and culture.

**Learning Affects All Methods of Behavior:** Learning impacts skills, knowledge, personality, motivation, fear, and behavior.

**Learning is a Continuous Process:** Learning continues from birth to death, indicating the lifelong nature of learning. Every day presents new situations, requiring necessary behavioral adjustments.

**Learning is Goal-Oriented:** Learning is not a purposeless activity; it is always aimed at achieving a specific goal.

**Learning is Universal:** Every living creature learns, with humans learning the most due to the complexity of human behavior. Positive learning is crucial for children's growth and development.

**Learning Results in Behavioral Change:** Learning changes behavior, influenced by previous behavior. It is any activity that leaves a relatively permanent effect on later activities.

**Learning is a Process of Change:** Learning is the process leading to change, not just the result of changed behavior.

**Learning Occurs When a Living Being Exhibits Behavior in a Situation.**

**Learning is the Result of Individual Activity.**

**Learning is a Total Response to a Whole Situation.**

**Learning is a Process of Growth and Development.**

**Learning is Adaptation.**

**Learning is a System of Experiences.**

**Learning is Both Personal and Social.**

**Learning is the Production of New Behaviors and the Discovery of New Actions.**

### **Check Your Progress**

1. Describe the characteristics of learning.

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## **5.5 Theories of Learning**

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Acquisition or learning is one of the most important subjects in educational psychology. The majority of human behavior relies heavily on learning. Therefore, in educational programs, especially in programs like B.Ed, when students are guided, it is emphasized that the teacher responsible for guiding children in their learning should know the ways children learn. A teacher can assist children effectively only when they know the correct method through which a child learns. Educational psychologists have reached many conclusions based on scientific studies, which are referred to as learning theories. It's very difficult to determine which theory is better or correct. All theories have their significance as they attempt to answer how we learn.

Here, information about three main theories will be provided:

### **5.5.1 Constructivist Theory of Learning**

In today's era, particularly in the field of education, the term constructivism is heard frequently. Constructivism has emerged as an influential theory in education over the past decades, which applies to both the theory of learning and epistemology. It's now believed that teachers cannot merely transmit knowledge to students; rather, students actively construct knowledge in their minds. This means they transmit information and engage with new information in light of prior knowledge. If any modification is required in this process, benefits are reconsidered. Constructivism has roots in various fields such as philosophy, psychology, sociology, education, and cognitive sciences. Experts in education, psychology, and sociology are involved in their respective fields, bringing forth new theories and trends. Therefore, it's necessary for us to think and understand these theories to comprehend how they can be applied.

In the initial stages, the work of Giambattista Vico (1664-1744) can be observed. He presented a constructive theory of knowledge, considering knowledge specifically as a human construction. The foundations of constructivist learning theories can be seen in the works of John Dewey (1929) and alongside his, Bruner (1961), Vygotsky (1962), and Piaget (1980). Bednar, Cunningham, Duffy, and Perry (1992) have emphasized that the outcomes of learning should focus on the process of knowledge construction and determining the documented works of learning objectives.

Let's now understand what constructivism entails. The term constructivism refers to the idea that the learner actively constructs knowledge. Constructivism emphasizes that human



knowledge and learning are actively constructed by the learner, not passively received from the environment. Constructivism is a perspective on education and learning based on the idea that perception (acquisition) is the result of mental construction. This means that learners connect new information with what they already know. Since knowledge is always constructed, it's created or generated by the individual through experience because constructivists believe that learning occurs through engagement with context where concepts and learners' beliefs and views are read or interpreted.

Constructivism is a learning theory that is a significant part of psychology, indicating how people can acquire knowledge and learn, thus it has direct application in teaching. It suggests that humans acquire knowledge through their experiences. Let's understand this through an example: A child lives in a village or a small town. The child has never left the village, never crossed a river, and has never attended school. Therefore, the child cannot even think that crossing a river is possible.

Driscoll (2000) clarifies that constructivist theory emphasizes that knowledge can only be acquired within the human mind or brain and that it does not correspond to the reality of any real world. Learners will continue to adjust their mental models to agree with their understanding of the world. As they experience new experiences, learners will continue to update their mental models and thus build their understanding of reality.

Kearsley defines Bruner's constructivism as a learning theory in which learning is seen as an active process where learners construct new ideas or concepts based on their current/past knowledge. According to Van Glasersfeld (1989), constructivism is based on the belief that knowledge is not passively received but actively constructed by the cognitive subject, and the function of cognition is to organize the experiential world rather than to discover ontological (metaphysical) reality. Bereiter (1994) states that constructivism fundamentally concerns how people learn, based on observation and scientific study. It posits that people experience things and, through reflecting on these experiences, construct their understanding and knowledge of the world.

Experts believe that when we encounter something new, we must reconcile it with our previous knowledge and experiences. We may change what we believe or discard the new information as irrelevant. Nevertheless, constructivism asserts that a child is an active creator of their knowledge. For such active creation, it is necessary to motivate or encourage the child to ask questions, explore, and assess what they already know. This means encouraging students to

use active techniques to construct further knowledge. Tam (2000) emphasized that while it is important for teachers to understand constructivism, it is equally crucial to comprehend its impact on teaching and professional development.

This theory points to two main concepts: first, learners develop new understanding using what they already know, and second, learning is active rather than passive. Learners confront new learning situations based on their understanding. If this confrontation does not match their current understanding, their understanding may change to accommodate the new experience.

Jonassen (1991) outlined eight characteristics of a constructivist learning environment:

- It features multiple representations of reality.
- The complexity of the real world is reflected in these representations.
- Emphasis is placed on the construction rather than the transmission of knowledge.
- Authentic tasks are considered crucial learning conditions.
- Opportunities are organized for case-based learning in real-world settings.
- Learners are trained to reflect on their experiences.
- Knowledge construction is not separated from content or context.
- Social negotiation and collaboration among learners are encouraged.

### **5.5.2 Behaviorist Theory of Learning**

When examining the history of behaviorist theory, the name of the Russian psychologist Ivan Pavlov comes to the forefront. According to Pavlov, behavior is determined by complex arrangements of stimuli and responses, which become more complex through learning. Following this, the era beginning with Watson's article in 1913 is significant, which is known as Watson's behaviorist theory and was accepted until 1930. In the subsequent period, the studies of Edward Tolman, Edwin Guthrie, Clark Hull, and B.F. Skinner emerged, which were termed the new behaviorist theory and accepted until 1960. These experts emphasized that the foundation of psychology comprises studies that focus on learning. Attention was also directed towards explaining behavior through the principles of conditioning and adhering to the principles of psychological functionality. Any concept that could not be practically defined could not be studied.

The period after 1960 is known as the era of the new behaviorist theory or social behaviorist theory. Proponents like Albert Bandura and Julian Rotter included cognitive or intellectual interest.

The behaviorist theory of learning connects stimulus and response. This theory emphasizes that behavior is greater than reflexes. That is, behavior comprises the responses and actions that an organism exhibits in a particular situation. In terminology, behavior is mostly used for those actions that can be observed externally. The behaviorist theory of learning focuses on how behavior is acquired. This theory also claims that learning can be enhanced by establishing a connection between stimulus and behavior and that any behavior can be modified through reinforcement. Followers of this theory believe that people are not born good or bad; rather, experiences and the environment shape an individual's personality.

The following are key points of the behaviorist theory:

- The theory equates learning with observable and measurable behaviors.
- Reinforcement plays a crucial role in the successful transfer of behavior through learning.
- There is a strong emphasis on the relationship between stimulus and response.
- Learning leads to changes in behavior.
- Learning occurs when the environment is conducive. Learning is the result of continuous interaction with the environment.
- A person's learning and an animal's learning are considered equivalent.
- The same principles apply to both a person and a dog.
- Behaviorist experts use the term conditioning instead of learning. According to them, learning in an organism occurs through conditioning by responding to the environment.
- Learning is only considered to have occurred when there is a visible change in the organism's observable behavior.

The characteristics of the behaviorist theory include:

- Experts of this theory believe in studying the behaviors of both animals and humans.
- This theory places special emphasis on environmental factors.
- Conditioning is the key to understanding behavior, which consists of stimuli and can be successfully experimented with using scientific methods.
- Adaptation is the fundamental method of learning.
- Behaviorist experts believe that a unit of knowledge is connected to a new unit of knowledge through similarity, difference, or proximity.

The above discussion indicates that the behaviorist theory primarily claims that examining and observing the behavior of animals can illuminate human education. It also asserts that the subject of psychological research is not the mind but behavior. The main goal of this theory is to establish a relationship between stimulus and response.

### **5.2.3 Insightful Theory of Learning**

Insightful learning refers to the sudden realization of a solution to a problem. Kohler suggests that not all types of learning depend on trial and error or conditioning; rather, cognitive processes are utilized for learning. Using cognitive processes, we internally seek the problem and its solution. In other words, individuals or creatures perceive relationships through responses, not through trial and error. Initially, a person establishes relationships between different parts of their environment and tries to understand the whole situation, then reacts accordingly. This means learning by understanding, which implies learning by fully comprehending the situation.

Kohler conducted several experiments; two of these are described below:

In one experiment, Kohler kept a monkey named Sultan hungry for a while and then placed him in a large cage. He hung bananas from the ceiling and placed a box in one corner of the cage. Sultan tried to reach the bananas but couldn't succeed. Another box was placed in the same cage. Using his intelligence and insight, Sultan stacked the two boxes on top of each other, stood on them, and reached the bananas, thus achieving success. This proves that learning can occur through insight.

In another experiment, Kohler provided two sticks. These sticks were designed to fit into each other so that a shorter stick could be inserted into the end of a longer stick, making it longer. The monkey observed the entire situation and used insight to join the sticks and reach the food.

These experiments demonstrate that, like Sultan, humans also learn through insight. For every task or action, we need to use insight. The solution to various problems is often achieved through insight. It has often been observed that a treat placed in a high location is only accessible through the method employed by Sultan.

#### **Stages of Insightful Learning:**

- The learner perceives a situation.
- The learner acts upon this perception and redefines the situation in a new perception.
- The learner acts upon this new concept and reinterprets the situation.
- This process continues until the learner suddenly solves the problem.

### **Criteria for Insightful Learning:**

- **Comprehensive Understanding:** A complete grasp of the overall situation is necessary for insightful learning.
- **Clear Objective:** The goal must be clear from the start.
- **Ability to Generalize:** The learner should have the ability to define and generalize.
- **Sudden Solution:** The hallmark of insightful learning is the sudden solution to a problem.
- **New Perceptions of Objects:** Insight into a problem results in new forms and patterns of objects.
- **Transfer:** Transfer of learning occurs as a result of insight. Principles learned in one situation apply to another.
- **Change in Behavior:** Insight brings about a change in behavior.

### **Laws of Insight Learning:**

- **Law of Proper Structure:** Well-structured experiences are learned more easily than unstructured ones.
- **Law of Similarity:** Similar things are associated together.
- **Law of Proximity:** Things that are close to each other form a group.
- **Law of Closure:** Individuals perceive incomplete objects as complete forms.
- **Law of Continuity:** Things that have continuity are learned easily.

### **Check Your Progress**

1. Describe the criteria for learning through insight.
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## **5.6 Types of Learning**

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The following are the key points:

- When a particular stimulus-response pattern is reinforced, the individual tends to react.
- Reinforcements are outcomes that enhance or strengthen behaviors.
- Positive reinforcement is a reward or pleasant outcome that follows a behavior, leading to its repetition. Similarly, negative reinforcement also increases the

frequency of the desired behavior but in a different way, by allowing the person to avoid an unpleasant outcome.

- Punishment is an unpleasant consequence that discourages or reduces a particular behavior.
- If reinforcement is removed, the conditioned behavior decreases and eventually disappears.
- Complex tasks, skills, and knowledge are learned by breaking them down into smaller sub-tasks.
- Regularly checking the student's work and providing feedback and encouragement is essential.

The points mentioned above are key aspects of Skinner's theories.

### **Check Your Progress**

1. Describe the seven types of learning proposed by B.F. Skinner.
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## **5.7 Learning Outcomes**

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After studying this Unit, you should have learned the following:

- Learning is a change in behavior resulting from experience and training.
- Constructivist theory emphasizes that knowledge exists only within the human mind and brain. The term constructivism refers to the idea that learners actively construct knowledge. This theory focuses on the notion that humans construct knowledge and learning actively.
- The behaviorist theory of learning connects stimulus and response and emphasizes that behavior is more than reflexes.
- Insightful learning refers to the sudden realization of a solution to a problem and involves cognitive processes.

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## **5.8 Glossary**

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**Learning:** A change in behavior resulting from experience.

**Development:** Growth and advancement.

**Behavior:** Conduct or actions.

**Response:** Reaction.

**Epistemology:** The study of knowledge.

**Insight:** Awareness.

**Similarity:** Likeness.

**Conditioning:** Effects of something.

**Reinforcement:** The act of encouraging.

**Motivation:** That which initiates movement.

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## 5.9 Unit End Exercises

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1. What is the literal meaning of IKTISAAB (learning)?
2. What is called a change in behavior?
3. What is the change resulting from practice and experience called?
4. Which theory indicates the active construction of knowledge by the learner?
5. Which theory does Watson advocate?
6. What is the name of the theory where a sudden solution to a problem involves cognitive processes?
7. Which learning theory is associated with the monkey named Sultan?
8. Which theory includes the Law of Proper Structure?
9. Who is considered the founder of operant conditioning?

### Short Answer Questions

1. Define learning.
2. Explain the concept of learning.
3. Explain the central idea of the constructivist theory of learning.
4. Describe one of Kohler's experiments.
5. Explain Ivan Pavlov's views related to the behaviorist theory..

### Long Answer Questions

1. Provide a detailed review of the nature and characteristics of learning.

2. Write a detailed essay on the constructivist theory of learning.
3. Explain the concept of insightful learning and its application in the classroom.

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### **5.10 Suggested Learning Resources**

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- Chauhan, S.S (1983) Advance Educational Psychology, Vikas Publishing Pvt. Ltd. New Delhi.
- Kulshetra, S.P. (1997), Educational Psychology Raj Printer Meerut
- Mangal, S.K. (2003) Advanced Educational Psychology - Prentice Hill of India Pvt. Ltd. New Delhi.



## **Unit-6: Understanding the Characteristics and Needs of Learners**

### **Structure**

**6.0** Introduction

**6.1** Objectives

**6.2** Need to Understand the Learner

**6.3** Characteristics of Learners

**6.4** Individual Differences of Learners Based on Intelligence, Aptitude, and Personality

**6.5** Understanding Learners with Special Needs

**6.6** Learning Outcomes

**6.7** Glossary

**6.8** Unit End Exercises

**6.9** Suggested Learning Resources

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### **6.0 Introduction**

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Teaching is an art and the teaching-learning process is a complex one. In the previous unit, you learned some basic information related to learning, such as the meaning and concepts of learning, important theories of learning, and important types of learning. In this unit, we will learn about the core focus of teaching and learning, which is the learner. We will also understand why it is essential for a teacher to understand their students. Additionally, we will try to understand the characteristics of learners and the individual differences among them.

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### **6.1 Objectives**

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After completing this Unit, you will be able to:

- understand the need and importance for teachers to understand their students.
- be aware of the characteristics of learners.
- identify students with special needs.
- understand the concept of individual differences and their application in the classroom.

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## 6.2 Need to Understand the Learner

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In the current era, the learner is considered the center of the teaching and learning process. This concept is known as "learner-centered education." It means that in the teaching process, the mental and physical abilities of students, their interests, natural attitudes, tendencies, learning pace, etc., should be given central importance. Previously, teachers were the center of the teaching process, and this method of education was called "teacher-centered education," where the entire teaching process depended on the teacher's abilities, personal interests, and preferences. As teachers, our primary responsibility is to know our students. It is not enough to know students' names, ages, family backgrounds, etc., but we should delve deeper into exploring their learning interests and abilities. Below, we will review the factors that can make us better teachers and make our teaching more effective.

1. **Recognizing students' learning strengths:** Generally, it is observed that some students excel in art and other creative subjects, while other students are interested in subjects like science, math, sports, etc., which better match their abilities. According to the American psychologist Robert Sternberg's theory, humans are proficient in one of three types of intelligence. Hence, it is possible that the teacher sees all these things in their students. The three types are: (i) **Practical Intelligence:** Students who excel in practical intelligence are smart and quickly adapt to changes in the environment. (ii) **Creative Intelligence:** Students with high creative intelligence are interested in tasks that require innovation, critical thinking, and creative discovery. Such students participate more in classroom discussions and succeed. (iii) **Analytical Intelligence:** Students with high analytical intelligence choose tasks that offer opportunities for planning, critical thinking, and analysis. These students are hardworking and eager to acquire new information.
2. **Knowing students as individuals:** As a teacher, if you view your students as individuals, you can provide an inclusive and respectful environment. This helps students fully engage in learning and express their difficulties and problems openly, seeking support from teachers and peers when needed. Some students hesitate to speak in the classroom. These students should be provided with opportunities to express their thoughts and feelings using online resources.
3. **Providing opportunities for students to explore their key interests:** When the teacher is aware of the individual interests of students, they can adopt strategies in their teaching

process that are suitable for them. However, first, it is essential for students to try to explore their own interests. The teacher should provide time and opportunities, along with guidance and support, to help students in their exploration.

**Check Your Progress:**

1. Why is it necessary for any teacher to be aware of students' needs and interests?

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2. As a teacher, what approach will you adopt to understand students?

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### **6.3 Characteristics of Learners**

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During the learning process, a student faces various issues such as doubts, exam anxiety, etc. These issues can be overcome through consistent effort and practice.

Here are some general characteristics of a good student:

- **A good student is never satisfied:** They are always striving to acquire new knowledge.
- **They try to solve their own problems:** They are actively engaged in finding solutions.
- **Enjoyment in exploring new information:** They find joy in the search for new information.
- **Hard work, dedication, and persistence:** They strive to complete any task assigned to them with full dedication and effort.
- **Respectful towards elders, teachers, peers, and others:** They treat everyone with respect.
- **Emotionally stable with strong social skills:** A good student is emotionally stable and has mastered social skills.
- **Self-motivated:** They are driven by internal motivation.
- **Sense of responsibility:** A good student has a strong sense of responsibility.
- **Partner in the teaching-learning process:** They help their peers in completing educational activities.
- **Adaptability to changes:** A good student has the ability to adapt quickly to changes.

- **Willingness to learn:** Learning is effective only when the student is willing to learn.
- **Diverse interests and behaviors:** Each student has different interests and behaviors. Teachers need to guide them according to their interests and behaviors.
- **Ease in group work due to diverse social and cultural backgrounds:** Initially, students from different social and cultural backgrounds find it easier to work in groups, but once they become familiar with the environment, they can work individually without difficulty.
- **Anxiety or nervousness is a natural trait:** This occurs when students are unable to understand something. A good teacher can alleviate this through a positive classroom environment.
- **Hidden creative abilities:** Every student has some creative abilities. Teachers should identify these hidden talents and nurture them through various activities.

By keeping the above characteristics in mind, a teacher can make the teaching-learning process effective and efficient.

### **Check Your Progress**

1. Write four important characteristics of students.

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2. How can a better teacher make their teaching more effective? Describe in relation to students' characteristics.

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## **6.4 Individual Differences of Learners Based on Intelligence, Aptitude, and Personality**

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God's greatness lies in the fact that He has not made any two creations alike. Since the creation of Adam, millions of people have been born, but no two individuals are completely identical. Not only are individuals physically different, but they also vary in psychological, emotional, and other characteristics. This is what we call individual differences. First, we will try to understand the concept of individual differences through some important definitions and then see its importance in the teaching-learning process.

### **Definitions of Individual Differences:**

- **Drever James:** "Individual differences are those variations and differences among individuals that distinguish one person from another."
- **Marquis D.G. and R.S.:** "Individual differences are found in all psychological characteristics, physical and mental abilities, knowledge, habits, personality, and character traits."

From these definitions, it becomes clear that differences are of all kinds, but here we will discuss differences based on intelligence and personality.

According to Sprenger, "Individual differences can be defined as personal characteristics that distinguish one student from another."

### **Individual Differences in Intelligence**

Intelligence is an important trait found among humans, which is average in most people but only a few possess high or low intelligence. Terman has categorized individuals based on their level of intelligence into nine categories:

1. **Genius**
2. **Near Genius**
3. **Very Superior**
4. **Superior**
5. **Average**
6. **Backward**
7. **Feeble-Minded**
8. **Dull**
9. **Idiot**

Intelligence is the ability of a person to learn something and then apply it appropriately at the right time. Binet and Simon were the first psychologists to define intelligence in 1905. They explained intelligence as: "Better understanding, better comprehension, and effective reasoning."

### **Individual Differences in Aptitude**

The ability and power to perform a specific task at a specific time are related to intelligence. In contrast, when an individual receives training for a specific task and then possesses the ability to perform that particular skill, it pertains to aptitude. Simply put, even if an individual receives proper training in music, it does not necessarily mean they will become a good musician unless they possess innate qualities related to music such as pitch, tone, and rhythm.

## **Personality and Individual Differences**

The study of personality and individual differences is an essential part of psychological analysis. Each individual is unique in the combination of various personality traits and behaves differently in social situations. Before understanding the importance and utility of individual differences in personality, it is crucial to be familiar with the concept of personality.

According to psychologists, personality can be understood as the combination of specific character and mental traits present in an individual. The English word "personality" comes from the Latin word "persona," which means "mask," used by actors to portray different roles.

Allport provided a comprehensive definition of personality: "Personality is the dynamic organization within the individual of those psycho-physical systems that characterize his or her unique adjustment to the environment."

Raymond Cattell defined personality as: "The traits that predICT a person's behavior."

Baron described personality as: "It is generally defined as an individual's unique and relatively stable pattern of behavior, thoughts, and emotions."

From these definitions, three important points about personality can be deduced:

1. Personality includes both behavioral and mental traits.
2. It is the sum of all characteristics and qualities.
3. It is unique and specific to each individual.

### **Important Characteristics of Personality**

1. **Dynamic Organization:** The psychological components of the personality system work independently yet cohesively.
2. **Psycho-Physical System:** Various elements like traits, emotions, intelligence, temperament, ethics, etc., are based on the body's nervous system and endocrinology.
3. **Unique:** Each individual's personality is unique and distinct.
4. **Stable Pattern:** An individual behaves consistently across different situations and contexts.

### **Factors Affecting Personality**

Several elements contribute to the development of personality, but two main factors play a significant role: heredity and environment.

1. **Heredity:** Genetics is the branch of science that examines the effects of heredity on living beings. We inherit certain inclinations towards specific structures and ways of functioning. These traits include:

- A tendency to achieve a specific body weight.
- A tendency towards a certain body type.
- Gender.
- Physical appearance, such as skin, hair texture, color, eyes, nose, ears, and other external features.
- Internal structures, such as the size of the lungs and heart proportional to the body, etc. Traits that fall under the tendency to function in specific ways include:
  - Natural reactions, like the efficiency of the nervous system, intelligence, quick or slow responses to stimuli.
  - Sensory efficacy, such as visual acuity, hearing ability, sensitivity to smell and touch.
  - The efficiency of the cardiovascular, digestive, and reproductive systems.
  - The efficiency of the endocrine system, such as the quantity of secretions from various glands and the ability to regulate them.
  - The rate of physical development.

(ii) **Environment:** Technically, environmental factors start affecting us from the womb.

A pregnant mother's dietary habits, emotional balance during pregnancy, and health during pregnancy impact the child. Immediately after birth, cultural influences begin to affect the child. As the child grows, they continue to absorb influences from their surroundings, which shape the traits of their personality.

Now, we will briefly discuss some important environmental factors and their effects on personality:

- **Parenting Patterns:** The interaction between a mother and child starts immediately after birth. The initial environmental influences begin from the mother's lap. The child's development is shaped by the type of relationship with the mother. For example, if the mother spends more time with the child, it instills a sense of security that can last a lifetime.
- **Interaction with Family Members:** As the child grows, their social world expands beyond the mother's lap. The interactions and behaviors of parents and other family members deeply affect the child's personality development. A nurturing home environment with love and empathy, avoiding constant scolding, and using encouragement rather than punishment foster self-confidence and trust in society.

- **School Environment:** The school environment is also crucial, especially the teacher's behavior, communication style, classroom activities, and learning approach. A learning environment that aligns with children's natural tendencies fosters positive personality traits. Therefore, teachers must be well-versed in children's psychology and employ teaching strategies and activities that make learning easy, interesting, and effective.
- **Neighborhood:** The neighborhood provides a significant cultural environment for the child. Neighborhood families often share similar cultural values and parenting methods. Consequently, children find it easier to adapt to the social norms of their neighbors. Childhood experiences from the neighborhood leave lasting impressions.
- **Peer Group:** The peer group emerging from the neighborhood is very important for the child's social development. This is where children learn to control their emotions, adopt others' ways, and respect others' views. As a member of this group, the child tries to conform to societal norms and changes their behavior to keep the group members happy.
- **Public Communication and Its Impact on Children's Personality**

In the present era, the element among environmental factors that most profoundly influences children's personality is public communication. While we were familiar with the effects of television, newspapers, magazines, and radio, in contemporary times, the widespread use of the internet and smartphones has relegated all these forms of media to secondary status in terms of communication. We observe that as soon as children open their eyes, they engage their elders with the use of smartphones. Furthermore, parents themselves provide this device to children as an alternative to toys at a very young age. The negative effects of excessive smartphone use on children's psychology are complained about by all psychology experts.

From the above discussion, we can deduce several important points:

- In determining personality, the influence of heritage is stronger compared to environmental factors.
- While it is nearly impossible to change hereditary elements, providing a suitable environment can lead to improvement.
- For example, intelligence is a hereditary element that cannot be changed, but by organizing better teaching methods, interesting activities, and creating motivation among students, we can enhance that intelligence.



- The environment, including parents, family, friends, neighbors, society, school, peers, and mass media, all play their roles, and this is the field where we can shape children's personalities in the desired direction.
- Since each child's heritage and environment are unique, individual differences in their personality traits are clearly evident.

Understanding these individual differences is essential for every teacher and parent so that children can receive proper upbringing and better care and guidance.

**Check Your Progress:**

1. What does individual differences in inclination mean?

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2. What do you understand by heritage?

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## **6.5 Understanding Learners with Special Needs**

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Special educational needs learners refer to those learners who are physically disabled, behavioral, emotionally disturbed, and have irregularities in reception, expression, and acquisition, and they require additional assistance. Understanding the educational needs of learners with special needs is extremely important so that their difficulties can be overcome and they can be enabled to acquire skills. Special needs learners refer to those learners who are significantly different in their individual characteristics and educational abilities compared to their peers.

Special needs learners can be divided into five categories: • Physical impairment • Visual impairment • Hearing and speech impairment • Slow mental ability • Learning disability • Behavioral disorders

In addition, there are also children who have extraordinary intelligence, whom we call gifted. Some of them also possess specific talents such as artists, photographers, poets, writers, etc.

Understanding the educational needs of all these categories of students is essential for every teacher because until we identify their needs, providing them with educational activities becomes difficult. The Right to Education Act 2009 in our country has given the right to

education to all children. All children, including those with special reasons due to their peers, are included in this legal right. Therefore, they should also be given opportunities to participate in educational activities.

Now we will try to understand children with different degrees of special needs.

- **Students with physical disabilities:** These are students who are physically impaired due to some disability, such as difficulty in walking or limping, making them different from other normal children. Although they are not behind in acquiring abilities, they remain limited in carrying out many educational activities due to their physical disabilities.

- **Students with visual impairment:** These are students whose vision is either weak or completely blind. Students who are completely blind benefit from education in special schools for the blind. However, students with weak vision or some kind of visual impairment can be made capable of acquiring skills to a great extent by taking corrective measures. Teachers should identify the disabilities of such children and help solve their educational problems.

#### **Students with Hearing and Speech Impairments:**

Listening plays a crucial role in the educational process and learning. Hearing impairments interfere with learning and directly affect speaking abilities. It is commonly said that good conversation depends on good listening. Therefore, it is essential to identify such students to take appropriate measures to meet their educational needs. Students with hearing impairments can be easily identified through observation of their behavior.

#### **Students with Lower Mental Capabilities:**

Children with lower mental capabilities often perform poorly academically. Physically, they are generally fine, but due to their mental weakness, they struggle to adapt well in the classroom. Typically, these students perform poorly in academics, forget shortly after learning, get distracted during lessons, and often suffer from a fear of failure. For such students, teachers should use concrete experiences to explain concepts and frequently repeat lessons. Activities like practice and drills are beneficial for them. This condition is also known as intellectual disability. The term "intellectual disability" is used when an individual's learning ability is below the expected level and they are unable to perform daily tasks.

Psychologists classify intellectual disability into four categories:

1. Mild intellectual disability
2. Moderate intellectual disability
3. Severe intellectual disability

#### 4. Profound intellectual disability

According to the American Psychiatric Association, about 1% of the population is affected by intellectual disability, with approximately 85% having a mild form.

Effects of intellectual disability include:

- **Cognitive Functioning:** Significant deficiencies in learning, decision-making, problem-solving, memory, and academic skills.
- **Practical Functioning:** Includes the ability to perform tasks, self-care, schoolwork, and proper money management.
- **Social Functioning:** Involves the skills required to interact with society, understand social norms, and apply them.

Intellectual disability can be diagnosed through various tests, the most popular being the IQ test.

#### **Learning Disabilities:**

Learning disabilities are disorders that affect an individual's ability to understand, speak, and write language; perform mathematical calculations; control body movements; and maintain focused attention. Common types of learning disabilities include:

1. **Dyslexia:** A language processing disorder that affects reading, writing, and comprehension skills. Children with dyslexia face issues with:
  - Letter and word recognition
  - Understanding words and ideas
  - Reading fluency and speed
  - General vocabulary skills
2. **Dysgraphia:** A disorder where children have difficulty expressing their thoughts in writing. They struggle to translate their ideas into written words.
3. **Dyscalculia:** A disorder where children have trouble with mathematical skills. This includes understanding number organization, symbols, and counting principles.
4. **Dyspraxia:** A learning disorder where children have difficulty controlling and coordinating their bodily movements.
5. **Dysphasia:** A disorder that affects language and communication abilities. Children with dysphasia struggle to understand and express language. Communication involves gathering thoughts in the brain and then selecting and using the right words to convey them to others.

## **Auditory and Visual Processing Disorder**

Experts in psychology refer to auditory processing as receptive language. This includes various difficulties in visual processing, such as seeing numbers and letters in reverse, and accurately judging depth or distance.

## **Behavior-Related Disorder**

The disabilities mentioned above directly affect the learning process, while there are several other disabilities related to a person's behavior, which also create obstacles in a child's learning process.

In this unit, we will learn about two important behavior-related disorders.

### **I. Autism (Autism Spectrum Disorder - ASD)**

This disorder, fully named Autism Spectrum Disorder (ASD), is a neurological and developmental disorder. Children affected by this disorder face difficulties in interacting with others, communicating, and behaving appropriately. It is called a developmental disorder because its symptoms begin to appear within the first two years of life.

#### **Key Characteristics of Autism:**

- Weakness in social skills and communication skills
- Difficulty in forming relationships with others
- Limited and repetitive behaviors
- Unusual and intense interests
- Delay in language development
- Difficulty in understanding and using non-verbal communication
- Not communicating like other children
- Moving fingers, hands, or parts of the body repeatedly
- Repeating the same sentence repeatedly
- Avoiding eye contact

#### **How to Help Children with Autism?**

Below are some suggestions to help children affected by autism:

- Be patient
- Teach children how to express anger without resorting to aggressive behavior
- Do not pay attention to irritating behaviors such as repeating the same sentence or moving the body repeatedly
- Interact with them through physical activities

- Treat them with kindness and respect

### **ADHD (Attention Deficit Hyperactivity Disorder)**

This is the most common neurological and developmental disorder found in children. Its symptoms usually appear in childhood and often continue into adolescence. Children affected by this disorder find it difficult to control their behavior focused on attention and are generally unusually active. They do not realize the consequences of their excessive movements and behavior.

#### **Common Characteristics of ADHD in Children:**

- They remain lost in daydreams even during the day.
- They forget many things and often lose many items.
- They talk excessively.
- They are extremely careless, leading to many mistakes.
- They lack interest in socializing and find it difficult to mix with others.

ADHD manifests in three different ways:

While common characteristics are found to some extent in every type, the classification is based on the predominant characteristic.

#### **1. ADHD: Combined Type**

- This is the most common type of ADHD, which includes inattentiveness, hyperactivity, and impulsivity.

#### **2. Hyperactive-Impulsive ADHD**

- The main characteristic of this type is extreme restlessness, hyperactivity, and impulsivity.

#### **3. Inattentive ADHD**

- As the name suggests, children with this disorder are extremely inattentive and have a very short attention span.

#### **How ADHD Affects Students' Accountability**

Children affected by ADHD face many challenges in the learning process. As mentioned above, they do not listen carefully, cannot focus on anything, are not serious about completing tasks, and are excessively talkative. For such children, inclusive classrooms with general students can be an excellent alternative for teaching and learning. A little extra effort from the teacher can help in their learning process. The teacher should give these children extra time, provide positive feedback on their educational achievements, use modern technological

resources during the teaching and learning process, give them breaks considering their short attention span, and avoid punishing them for disciplinary violations but rather either overlook or gently counsel them.

### Check Your Progress

1. What is meant by learning disability?

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2. How many types of intellectual disabilities are there?

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3. Write a short note on autism.

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## 6.6 Learning Outcomes

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After studying this Unit, you should have learned the following:

- **Student-Centered Education:** In modern student-centered education, the teaching process gives central importance to students' mental and physical abilities, their interests, natural behaviors, tendencies, and learning pace.
- **Theory of Intelligence by Robert Sternberg:** According to American psychologist Robert Sternberg's theory, humans excel in one of three types of intelligence: practical intelligence, creative intelligence, and analytical intelligence.
- **Individual Attention to Students:** If teachers view their students as individuals, they can provide an inclusive and respectful environment, which helps students engage fully in the learning process.
- **Challenges in the Learning Process:** During the learning process, a student faces various challenges such as doubts and exam fear. These issues can be overcome through effort, continuous practice, and perseverance.
- **Personality Concept:** The term "personality" comes from the Latin word "persona," meaning the mask that actors wear to portray different characters. Personality is the combination of specific characteristics and mental traits found in an individual.

- **Factors Influencing Personality Development:** Many factors influence personality development, but two elements play a significant role: heredity and environment. Heredity's impact is more powerful than the environment in determining personality.
- **Heredity and Environment:** While changing hereditary elements is almost impossible, a suitable environment can certainly bring about improvements.
- **Special Educational Needs:** Students with special educational needs include those who are physically disabled, have behavioral, emotional, or communication disorders, or have learning deficiencies. Understanding their educational needs is crucial to overcoming their difficulties and enabling them to learn.
- **Right to Education Act, 2009:** In our country, the Right to Education Act of 2009 grants all children the right to education, including those who differ from their peers due to specific reasons.
- **Types of Intellectual Disability:** Psychologists divide intellectual disability into four categories:
  1. Mild intellectual disability
  2. Moderate intellectual disability
  3. Severe intellectual disability
  4. Profound intellectual disability
- **Dyslexia:** Dyslexia is a language processing disorder that affects the abilities to read, write, and understand.
- **Dyscalculia:** If a child struggles with the required skills in mathematics and finds it difficult to solve related problems, this disorder is called dyscalculia.

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## 6.7 Glossary

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**Creative process:** The cognitive and imaginative process of generating innovative ideas or impressions.

**Self-motivated:** Having internal motivations or encouragement to achieve goals.

**Individual differences:** The unique characteristics, abilities, and traits that distinguish one person from another.

**Personality:** The unique patterns of thoughts, feelings, and behaviors that describe a person and distinguish them from others.

**Traits:** Enduring characteristics that influence a person's behavior and highlight their personality.

**Dynamic organization:** An adaptable and flexible system or structure capable of change and development.

**Heredity:** The genetic characteristics and traits passed from biological parents to their offspring.

**Students with special needs:** Students who require additional support due to disabilities, learning difficulties, or other exceptionalities.

**Physical impairment:** A condition that affects physical functioning or movement, such as mobility limitations or sensory impairments.

**Learning disability:** A neurological condition that affects specific cognitive processes, such as reading, writing, or mathematics, resulting in difficulties in acquiring and processing information.

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## 6.8 Unit End Exercises

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### Objective Questions

1. The current era is the era of \_\_\_\_\_.
  - (a) Learner-centered
  - (b) Teacher-centered
  - (c) Society-centered
  - (d) Individual-centered
2. A good student is \_\_\_\_\_ stable.
  - (a) Economically
  - (b) Religiously
  - (c) Emotionally
  - (d) None of these
3. An individual's intelligence is a part of their \_\_\_\_\_.
  - (a) Heredity
  - (b) Effort
  - (c) Education
  - (d) Environment
4. The origin of the word "personality" is \_\_\_\_\_ language.
  - (a) Arabic
  - (b) Roman



- (c) Latin
  - (d) Greek
5. Hearing impairment affects a child's \_\_\_\_\_.
- (a) Vision
  - (b) Intelligence
  - (c) Speech
  - (d) Attention

### **Short Answer Questions**

1. Define personality in two different ways.
2. What does heredity mean?
3. Explain the concept of individual differences.
4. What do you understand by learner-centered education?
5. Provide two examples of physical impairments.

### **Long Answer Questions**

1. What factors influence personality development? Explain.
2. What characteristics are found in a good student?
3. What difficulties do students with lower intellectual abilities face in learning?
4. What is meant by learning disability? Write a note on two major types of learning disabilities.
5. Discuss ADHD in detail.

### **Answers to Objective Questions**

1. a
2. c
3. a
4. c
5. c

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## 6.9 Suggested Learning Resources

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## **Unit 7: Process of Learning and Learning Curve**

### **Structure**

- 7.0 Introduction
- 7.1 Objectives
- 7.2 Process of Learning
- 7.3 Definition of Learning Process
- 7.4 Characteristics of Learning Process
- 7.5 Levels of Learning Process
- 7.6 Learning Curve
- 7.7 Making the Learning Curve
- 7.8 Characteristics of the Learning Curve
- 7.9 Plateaus in Learning
- 7.10 Learning Outcomes
- 7.11 Glossary
- 7.12 Unit End Exercises
- 7.13 Suggested Learning Resources

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### **7.0 Introduction**

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Learning is a universal and continuous process. Individuals learn wherever they are, from birth to death. Through experience and education, individuals change their behavior. Thus, learning is a productive process that brings changes in an individual's knowledge, skills, and behavior. Psychologists believe that learning is meaningful only if it results in behavioral changes.

Through the study of human development, psychologists have concluded that humans perform some actions naturally, such as breathing, blinking, seeing, hearing, walking, and moving. Additionally, there are actions that individuals begin to perform on their own as they grow physically and mentally, such as searching for food when hungry or fleeing when sensing danger. Psychologists call these basic instinctual behaviors. These actions do not need to be learned and are therefore called unlearned actions. Spontaneous expressions of emotions, like crying and laughing, also fall under unlearned actions.

Furthermore, there are actions learned based on an individual's natural and social environment, such as climbing trees, swimming, and speaking a particular language. Psychologists refer to these actions as learned behaviors, and the process of acquiring them is called learning. The pace of learning is not always the same. Like any progressive process, the learning process varies. The speed of acquiring information, skills, behaviors, and habits does not remain constant for an individual. The nature of progress or pace of acquisition in the learning process can be represented graphically. This method of representation based on learning outcomes and the time taken to achieve them is called the learning curve.

In this Unit, we will explore the process of learning and the concept of the learning curve, its characteristics, levels of learning, how to construct a learning curve, learning plateaus, and techniques to overcome them.

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## **7.1 Objectives**

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After studying this Unit, you will be able to:

- explain the concept of learning
- define learning
- list the characteristics of learning
- discuss the different levels of learning
- explain the concept and definition of the learning curve
- clarify the types of learning curves
- highlight the characteristics of the learning curve
- explain the concept of learning plateaus
- discuss the reasons for learning plateaus
- describe techniques to reduce or eliminate learning plateaus

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## **7.2 Process of Learning**

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Learning is an inherent trait of humans. A few months after birth, a child begins to imitate the activities of those they interact with. As the child grows older, they start asking questions like what, why, and how about new things they see, thereby gaining knowledge about

their surroundings. Later, the child is sent to school where they learn various subjects and activities.

In psychology, the concept of learning is broader and more complex. The term 'learning' is used in two contexts in psychology: as a process and as a product. As a process, learning refers to the method through which an individual acquires new facts and learns new activities. As a product, learning refers to the change in behavior that results from acquiring new knowledge and skills. From a psychologist's perspective, learning is meaningful only if it results in a change in behavior.

Through studying human development, psychologists have concluded that humans perform certain actions naturally, such as breathing, blinking, seeing, hearing, walking, and moving. Additionally, there are actions that individuals start performing on their own as they develop physically and mentally, such as searching for food when hungry or fleeing from danger. Psychologists call these instinctive behaviors. These actions do not need to be learned and are referred to as unlearned actions. Spontaneous expressions of emotions, such as crying and laughing, also fall under unlearned actions.

Moreover, some actions are learned based on an individual's natural and social environment, such as climbing trees, swimming, and speaking a particular language. Psychologists refer to these actions as learned behaviors, and the process of acquiring them is called learning.

### **Check Your Progress**

1. What is meant by the process of learning? Explain.
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## **7.3 Definition of Learning Process**

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According to the psychologists like Woodworth, Gates, and others, the process of learning can be defined as follows:

1. **Woodworth:** "The process of acquiring new knowledge and new responses."
2. **Gates and others:** "Learning is the modification of behavior through experiences and training."
3. **Skinner:** "Learning is a process of progressive behavior adaptation."

4. **Blair, Jones, and Simpson:** "Any change of behavior which is a result of experience and which causes people to face later situations differently, may be called learning."

In summary, learning involves acquiring new knowledge and skills through various means such as experience, teaching, training, and study. It is not just about changing behavior or adapting to the environment but also about preparing oneself to face future situations effectively.

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## 7.4 Characteristics of the Process of Learning

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Psychologists have identified several characteristics of the process of learning:

1. Learning is an inherent trait of humans.
2. Learning involves both action and result.
3. Learning is purposeful.
4. Learning is continuous throughout life.
5. Learning encompasses three stages: acquisition, retention, and application.
6. Learning is dependent on both heredity and environment.
7. Previous experiences play a significant role in learning.
8. Reinforcement is essential in the learning process.
9. Satisfaction and comfort contribute to effective learning.

These characteristics highlight the multifaceted nature of the learning process and underscore its importance in human development and adaptation.

### Check Your Progress

1. Describe the characteristics of the learning process.
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## 7.5 Levels of Learning Process

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Humans learn throughout their lives. In the process of learning, humans first acquire knowledge of something, an action, or facts, then they try to understand it, and finally, they use it when needed in future life. Learning has no meaning until it is applied in life. Another important aspect of the learning process is that humans discover new facts based on their learned knowledge and skills. Psychologists have divided this mental process of learning into three levels,

known as the levels of learning. These levels are: the Memory Level, the Understanding Level, and the Reflective Level. The details of these three levels of learning are as follows:

1. Learning at Memory Level: When a learner directly acquires knowledge of something, an action, or facts without thinking or understanding, it is called learning at the memory level. Since the learner does not think critically in this type of learning, it is also called thoughtless learning. Learning at the memory level involves the following four stages: (i) Perception: The learner first acquires knowledge of something, an action, or facts through the senses. In this process, the image, pICTure, or pattern of that thing, action, or facts is formed in the unconscious mind. This process is called perception in psychology. (ii) Retention: The process of retaining those patterns in the unconscious mind related to something, an action, or facts is called retention in psychology. This memory can be short-term, long-term, or lifelong. It depends on factors like age, maturity, physical and mental health, interest, inclination, and environment. (iii) Recall: Bringing back the stored experiences into conscious mind and expressing them is called recall in psychology. This ability varies among individuals. (iv) Recognition: Bringing back the stored experiences into conscious mind and understanding them clearly based on previous knowledge through differentiation, analysis, and combination is called recognition or enhancement in psychology. This recognition can be partial or complete.

Learning at the memory level is considered better when these four processes are carried out in the best possible way. Children usually acquire knowledge at this level initially. For learning at this level, the learner does not have to think critically. Since they only acquire facts mechanically, it is considered the lowest level of learning.

2. Learning at Understanding Level: When a learner acquires knowledge of something, an action, or facts by understanding and thinking about it, it is called learning at the understanding level. Because the learner uses the mind in this type of learning and thinks critically, it is also called thoughtful learning. The learner's knowledge of how much information he has about something can be determined by his ability to differentiate and distinguish that thing from similar things. Learning at the understanding level includes the following stages: (i) The learner tries to understand the thing, action, or facts based on his previous knowledge. (ii) The learner analyzes the learned thing, action, or facts, establishes relationships between causes and effects, and identifies hidden facts. (iii) The learner discovers hidden facts. (iv) The learner differentiates between similar facts. (v)

The learner expresses them in his own words. (vi) The learner uses them correctly in new situations.

The more accurately a learner performs the above actions, the higher the level of understanding learning is considered. Learning at this level requires significant mental exercise for the learner. Since the learner acquires new knowledge based on his previous knowledge, learning at the understanding level is considered better than learning at the memory level. Knowledge learned in this way remains preserved for a longer time compared to knowledge learned at the memory level. However, it is considered a lower level of learning in terms of critical thinking.

3. Learning at Reflective Level: When a learner has to think critically to understand a difficult thing, it is called learning at the reflective level. As far as reflective thinking is concerned, it also has to be done at the understanding level, but when one has to dive deep into the depths of knowledge for learning, it is called learning at the reflective level. Since the results of thoughts are important in learning at this level, it is also called learning at the reflective level.

Learning at the reflective level usually focuses on problems and involves both memory and understanding levels of learning. Acquisition at this level usually occurs in the following stages: (i) First, the learner tries to understand the structure (nature) of the problem. (ii) Then he thinks about the solution to the problem based on his previous knowledge, formulates some sub-hypotheses based on facts, and chooses the correct hypotheses while discarding inappropriate ones. (iii) Then he uses one method after another, selects the correct methods, and abandons inappropriate methods. (iv) Finally, he tests their accuracy.

Learning at the reflective level involves both memory and understanding levels of learning. Therefore, it is considered the highest level of learning. In this way, the learner uses his acquired knowledge and skills. Therefore, learning at this level depends on how clear the learner's previous knowledge is. Since the learner learns by doing it himself and learns through reasoning, it is considered the highest level of learning. In this way, acquired knowledge and skills become strong. It provides the basis for solving life's problems, creating new things, and making new discoveries. Learning at this level is possible only when the child has acquired knowledge at the memory and understanding levels, that is, he has previous knowledge about the subject and is proficient in critical thinking and reasoning.



### **Check Your Progress:**

1. Explain the stages of learning at the reflective level.
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## **7.6 Learning Curve**

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In our lives, we learn new information, subjects, actions, skills, and behaviors. For example, making images of things and people in our environment, riding a bicycle, speaking English, reading, writing, etc. The rate of learning these varies from the beginning to the end. Sometimes it is fast, and sometimes it is slow. If we graph our learning rate on graph paper, it forms a curve line, which is called the learning curve. In other words, the learning curve represents the progress or decline in learning. Gates and others explained the learning curve thus: "Curve of learning give graphic presentation of the amount rate and limit of improvement brought about by practice."

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## **7.7 Making Learning Curve**

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The learning or acquisition curve is based on the amount or quantity of performance or output achieved, the time taken to perform the task, and the amount of correct or incorrect responses. There are three types of acquisition curves:

1. Output Curve
2. Time Curve
3. Error Curve

Before plotting the above data on graph paper, a horizontal line known as the Base Line (OX) is drawn. A vertical line, known as the Y-axis (OY), is drawn perpendicular to it. The point O is the Point of Origin where the lines X and Y intersect. A 90-degree angle is formed between lines X and Y at this point. Line OX is called the X-axis, and line OY is called the Y-axis. Markings are made on the X-axis for equal intervals of acquisition efforts from left to right. Similarly, markings are made on the Y-axis for equal intervals of time or correct/incorrect responses or output from bottom to top.

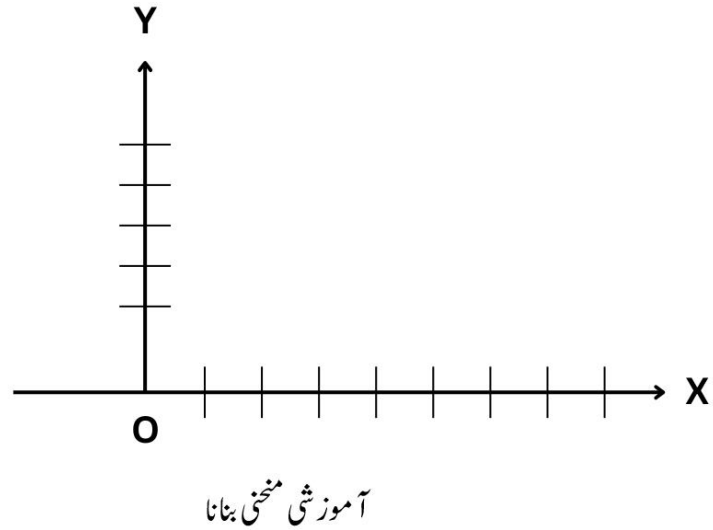


Image 7.1: Marks (\*) are placed where the number of efforts intersect on the X-axis and the amount of time or output intersects on the Y-axis. After marking the acquisition of all efforts and the amount of output, a line is drawn through the points of intersection from the starting point O on the X-axis. The resulting shape of the line is usually curved and spiraled, indicating the acquisition efforts and acquired output. This line representing acquisition efforts and acquired output is called the learning curve.

**Check Your Progress:**

1. Explain the Time Curve.
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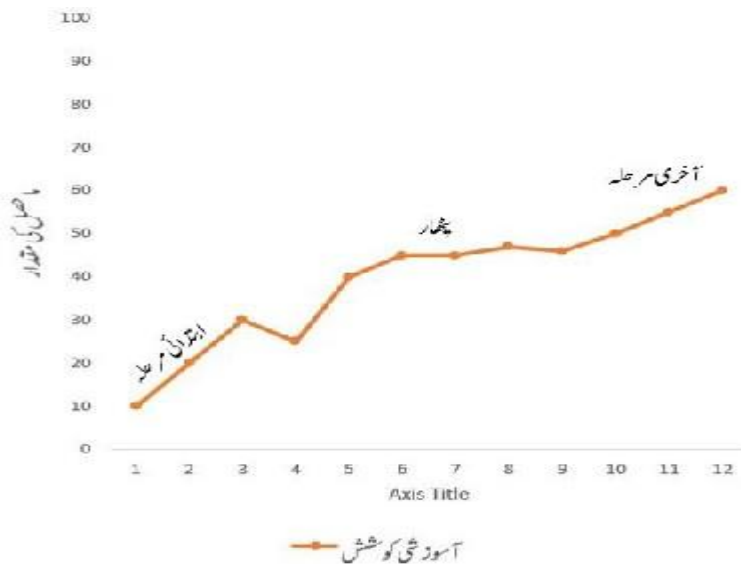
## 7.8 Characteristics of the Learning Curve

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Various experiments have been conducted regarding the process and stages of human learning, and based on them, some graphical lines have been prepared. By studying them, the following characteristics of the learning curve become apparent:

1. Improvement in Learning Process: The learning curve can be specifically divided into three stages: initial, middle, and final. In these three stages, the progress of learning can vary. Stuart & Oakden mentioned that "the rate of improvement is not uniform. The rate of improvement in the final stage is much higher compared to the initial stage."

- **Initial Stage:** At the beginning, the learning rate is generally moderate, but it's not necessary. Gates and others suggest that "the initial learning rate is often fast, but it cannot be considered a universal property of learning."
- **Middle Stage:** As the individual continues to practice the action, they continue to progress in learning. However, the rate of improvement is not constant. Sometimes they take steps towards progress, and sometimes towards decline. Skinner wrote, "Learning involves daily peaks and troughs, but the overall progress of the learner continues in a certain direction."
- **Final Stage:** As the final stage of learning approaches, the learning rate slows down. Eventually, there comes a stage where the individual reaches the limit of learning. Regarding this limit, Gates and others wrote: "Theoretically, there is a limit to the improvement in the learning process, but practically, it may never be achieved."



2. **Dependency on Various Factors:** The learning rate depends on various factors such as the learner's interest, motivation, curiosity, enthusiasm, prior knowledge, ease or difficulty of the task, etc. In some tasks, the initial learning rate is necessarily slow, while in others, it is fast. For example, children's learning to read starts with a slow learning rate, but as they learn phonetics and words, their reading learning rate increases significantly. On the other hand, if we talk about learning dance, the learning rate is fast at the beginning, but it requires a long time to acquire the skill.

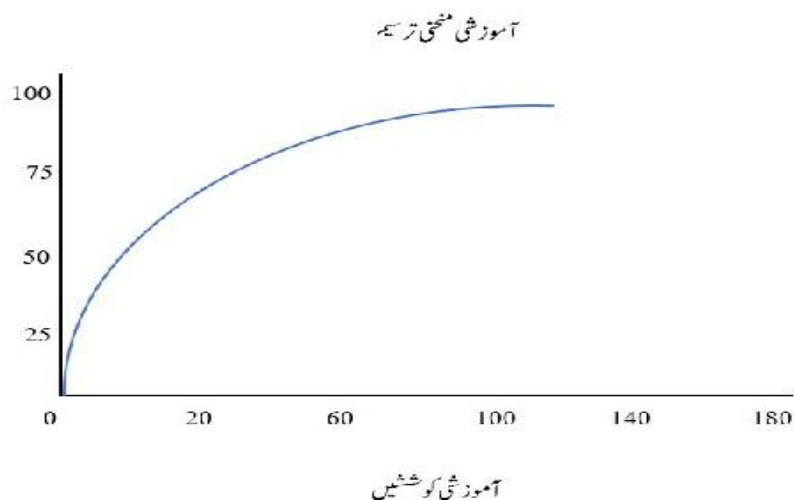
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## 7.9 Plateaus in Learning

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When we learn something new, progress in learning is usually continuous, but it's not always the case. Our progress sometimes slows down or stops altogether. After some time, there comes a point when our progress completely halts. This phase in learning is called a plateau. In other words, a plateau in the learning process occurs when instead of the learning curve line going up or down, it starts to move straight (flat) on the graph. This flat position on the graph is called a learning plateau.

Ross defined plateaus thus: "Plateaus are a characteristic feature of the learning process indicating a period where no improvement in performance is made."



There is no fixed time for when or how long a plateau in learning occurs. One person might progress rapidly while another might experience delays in learning the same thing. The reason for this is the occurrence of plateaus after certain stages of learning. Different individuals reach various stages of learning at different times. Rex & Knight suggest that plateaus occur when a person reaches one stage of learning and enters another.

For example, learning to type can illustrate this. A person learning to type first learns the alphabet, then words, then word combinations, and finally typing complete sentences. As they progress from one stage to another, they encounter plateaus. Thus, plateaus occur at proportional intervals in the stages of learning a skill.

Now the question arises, how long do plateaus last? That is, when do individuals stop making progress in learning? Sorenson answers this by saying that plateaus in the learning phase usually last for a few days, weeks, or months.

### **Causes of Plateaus in Learning:**

Plateaus in learning can be caused by various factors:

1. **Wrong Method of Learning:** An incorrect learning method is a significant cause of plateaus. Methods like counting letters instead of typing them, gripping the pen too tightly while writing, or reading each word haltingly are all inappropriate and can hinder progress.
2. **CONFLICT between Old and New Habits:** Another major reason for plateaus is the conflict between old and new habits. When a person starts learning word formation after practicing the alphabet, the clash between old typing habits and new formations begins. Established old habits make it difficult to form new ones, resulting in a learning plateau.
3. **Complexity Level of Work:** Plateaus can also occur due to the difficulty level of the task. For example, learning multiplication may be more difficult than addition. When the learning task becomes more challenging, progress slows down, leading to plateaus.
4. **Emphasis on One Aspect of Complex Work:** Focusing only on one aspect of a complex task is another cause of plateaus. For instance, if someone learning a language concentrates solely on reading, progress slows down soon, resulting in plateaus.
5. **Physical Capacity:** A person's physical capabilities can also lead to plateaus. Reyburn highlights this by saying that everyone has a limit to their abilities for any given task. When a person reaches this limit, known as physical capacity, their learning slows down, resulting in plateaus.
6. **Other Reasons:** Other factors contributing to plateaus include a lack of maturity, changes in learning methods, failure to learn a specific aspect of a task, lack of interest, knowledge, time, motivation, curiosity, and purpose, as well as stress, discouragement, illness, polluted environments, and domestic difficulties.

### **Elimination of Plateaus**

Since plateaus hinder the progress of learners and waste their time, some experts believe that eliminating plateaus is necessary. Sorenson suggests, "There may not be any method that completely eliminates plateaus, but their duration and frequency can be reduced." Practical measures to achieve this include:

- Providing motivation to learners.
- Selecting the best learning methods.
- Taking breaks at appropriate times during learning.
- Providing an optimal learning environment.

For teachers, studying plateaus in the learning process is of particular importance. Knowledge of plateaus informs teachers about the progress of students' learning. Based on the information about progress, teachers can formulate teaching practices, reduce students' difficulties, and make the learning process more effective.

### **Check Your Progress**

1. Why is it necessary to eliminate plateaus in learning? Explain.
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## **7.10 Learning Outcomes**

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After studying this Unit, you should have learned the following:

- Acquisition or learning is a continuous and ongoing process.
- The process of learning continues from birth to death.
- Through experience and education, individuals change their behavior.
- Learning is the process through which humans accept adaptable behaviors.
- Learning is a productive process through which individuals undergo changes in their knowledge, skills, and attitudes.
- Learning involves adaptive changes in behavior through experience and education.
- Learning has no meaning until there is a change in behavior.
- Humans learn not only through experiences and education but also through teaching, training, and study.
- Actions like breathing, blinking, seeing, hearing, walking, running, seeking food when hungry, and fleeing when feeling threatened are instinctive behaviors.
- Actions like climbing a tree, swimming, speaking a particular language, etc., are learned actions.
- The rate of individual learning in the process of acquiring knowledge, skills, attitudes, and habits is not always the same.

- The rate of learning can be depicted on a graphical sketch to show the nature of progress or decline.
- The graphical representation of the time spent acquiring and the acquired result is called the acquisition curve.
- The curve formed on a graphical sketch representing the rate of learning is called the learning curve.
- The learning curve represents the progress or decline in the learning process.
- The learning curve is a graphical representation of the quantity, rate, and improvement in learning through practice.
- There are three types of acquisition curves: 1) Achievement curve, 2) Time curve, and 3) Error curve.
- Learning experiences highs and lows daily, but the general progress of the learner continues in a specific direction.
- The rate of learning generally slows down in the final stage of learning.
- The rate of learning is influenced by various factors such as the learner's interest, motivation, curiosity, enthusiasm, previous knowledge, ease or difficulty of the task, etc.
- An opportunity arises in the learning process when progress comes to a complete halt; this is called a learning plateau.
- When the learning curve starts moving horizontally instead of up or down, the spot on the graphical sketch is called a learning plateau.
- Plateaus occur in learning when an individual reaches one stage of learning and enters another.
- Plateaus in learning usually last for a few days, weeks, or months.
- Incorrect learning methods, clash between old and new habits, difficulty level of the task, focusing on only one aspect of a complex task, physical capabilities, and other factors contribute to learning plateaus.
- Plateaus can be eliminated by providing motivation to learners, selecting the best learning methods, taking breaks at appropriate times during learning, and providing an optimal learning environment.

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## 7.11 Glossary

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**Aptitude:** Refers to the natural liking and potential for success in a particular activity.

**Conscious:** Awareness of the surroundings, emotions, thoughts, and feelings.

**Development:** A process that brings about progress and positive change.

**Assumptions:** Unverified beliefs that guide educational theories.

**Instinct:** Inherited behaviors or tendencies that are biologically determined and not based on experience.

**Extempore:** An impromptu or spontaneous speech delivered without prior preparation or practice. It is often used as an activity to promote speaking skills.

**Axis:** The centerline or reference line around which something rotates or is arranged.

**Intersect:** The point or line where two or more things meet or cross each other.

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## 7.12 Unit End Exercises

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### Objective Answer Questions

1. "Learning is the process of acquiring new knowledge and new activities." Who said this?  
(a) Woodworth (b) Skinner (c) Jones (d) Gates and others
2. "Learning is the corrective change in behavior through experience and training." Who said this?  
(a) Woodworth (b) Skinner (c) Jones (d) Gates and others
3. "Learning is the process through which humans accept adaptable behaviors." Who said this?  
(a) Woodworth (b) Skinner (c) Jones (d) Gates and others
4. Learning does not include which level?  
(a) Level of Memory (b) Level of Understanding  
(c) Level of Reflection (d) Level of Action
5. "Learning curve is a graphical representation of the amount, speed, and progress of learning through practice." Who said this?  
(a) Woodworth (b) Skinner (c) Jones (d) Gates and others

### Short Answer Questions

1. Explain the concept of the learning process.
2. Explain the statement "Learning is both an action and a result."
3. List the characteristics of learning.



4. What are the different levels of learning? Briefly explain.
5. Explain the stages of learning on the levels of Memory and Understanding.
6. Explain the stages of learning on the level of Reflection and Thought.
7. What do you understand by the term "learning curve"? Explain.
8. What are the different levels of the learning curve? Briefly explain.
9. Create an assumed learning curve for learning Urdu language.
10. Explain the characteristics of the learning curve.

### **Long Answer Questions**

1. Define and explain the concept of the learning process, proving that learning is both an action and a result.
2. Learning is a process and a lifelong activity. Explain in detail.
3. What are the different levels of learning? Illuminate all levels in detail.
4. How is learning different at the level of Memory compared to the level of Reflection and Thought? Explain.
5. Define the learning curve, explaining its different types in detail.
6. Describe the characteristics of the learning curve and shed light on its different stages.
7. Define the concept of "learning stone" and illustrate it with an example.
8. What are the various reasons for the learning stone? Explain the methods to overcome it.

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### **7.13 Suggested Learning Resources**

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1. Singh, A.K. (2010). Educational Psychology. Patna: Bharti Bhawan Publishers and Distributors.
2. Kapil, H.K. (1991). Youth! Abnormal Psychology. Agra: Bhargava Publications.
3. Khan, N.A. & Husain S.M.(2019). Aspects of Educational Psychology: Aligarh. Educational Book House

## **Unit 8: Factors Affecting Learning and Learning Styles**

### **Structure**

- 8.0** Introduction
- 8.1** Objectives
- 8.2** Factors Affecting the Learning Process
- 8.3** Learning Styles
- 8.4** Learning Styles According to Kolb
- 8.5** Learning Outcomes
- 8.6** Glossary
- 8.7** Unit End Exercises
- 8.8** Suggested Learning Resources

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### **8.0 Introduction**

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Learning is an inherent nature of humans, but a person learns what their environment teaches them. Building an effective environment is essential for learning, which is what teaching aims to accomplish. Learning is meaningless until the learner has actually learned. Although a person can learn without an effective environment, providing the necessary environment is crucial for purposeful learning. This is why contemporary efforts focus on understanding the factors that affect the learning process, enabling the provision of the required environment to enhance the speed and effectiveness of learning.

Educational psychologists focus on the learning process and the individual differences among learners. They have discovered principles and rules to make the learning process more effective. Moreover, it is important to consider the individual differences among learners in the learning process. We know that every individual differs in physical, mental, emotional, social, and aesthetic aspects. Each person's intelligence, inclination, interests, and attitudes are unique. These factors play a significant role in the actions performed by an individual and are crucial in the learning process as well. Since every learner has a unique way and style of learning, educational psychologists have identified various learning styles. In this unit, we will explore the different factors affecting the learning process as well as various learning styles.

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## 8.1 Objectives

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After studying this Unit, you will be able to:

- list the factors affecting the learning process
- explain learner-related factors that affect the learning process
- highlight teacher-related factors that affect the learning process
- discuss content-related factors that affect the learning process
- describe teaching method-related factors that affect the learning process
- emphasize the importance of environment-related factors in the learning process
- clarify the concept of learning styles
- elaborate on the learning styles proposed by Fleming and Mills
- list the learning styles identified by Coffield
- identify auditory, visual, and kinesthetic learners based on their characteristics
- describe the types of learners according to Kolb
- explain the characteristics of different types of learners as described by Kolb

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## 8.2 Factors Affecting the Learning Process

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When we consider teaching and learning holistically, five key components emerge: the learner (Student), the teacher (Teacher), the content (Content), the teaching method (Teaching Method), and the teaching-learning environment (Teaching Learning Environment). It is essential to maintain these five components in optimal condition to make the teaching-learning process effective. The elements related to these components are what we refer to as factors affecting the teaching-learning process. Given below is a detailed description of these factors:

**1. Factors Related to Learner:** The learner is the most crucial element in the teaching-learning process. The effectiveness of the process largely depends on the learner. Important elements related to the learner can be outlined as follows:

- **Age and Maturity:** As children grow, their physical and mental development progresses and is usually complete by the age of sixteen. It has been observed that as children mature physically and mentally, their learning speed increases, and the level of learning becomes higher.

- **Physical and Mental Health:** Physically and mentally healthy children show more interest in learning, experience less fatigue, and learn more quickly. In contrast, physically unhealthy or mentally ill children lack interest in any activity, making the teaching-learning process ineffective.
- **Intelligence, Interest, Attention, Aptitude, and Attitude:** Generally, the more intelligent a student is, the faster they learn. However, even if a student is highly intelligent, if they lack interest, attention, or aptitude in the subject, the learning process is not effective.
- **Level of Motivation and Will to Learn:** It is often observed that without an internal desire (motivation) to learn or know something, it is challenging to teach the learner. A high level of motivation and a strong desire to learn are necessary for effective learning.

**2. Factors Related to Teacher:** The teacher is the second crucial element in the teaching-learning process. Important elements related to the teacher can be outlined as follows:

- **Personality of the Teacher:** Personality is a broad concept that includes multiple aspects. When we talk about the teacher's personality, it includes physical and mental health, physical appearance, voice, knowledge and skills, communication skills, and behavior towards students. A more appealing teacher personality makes the teaching-learning process more effective.
- **Knowledge and Skills of the Teacher:** The teacher's knowledge and skills are vital elements of their personality. The clearer a teacher's understanding of their subject and the more skilled they are in teaching, the more effective the teaching-learning process becomes.
- **Teaching Skills:** Being knowledgeable and skilled is one thing, but effectively communicating that knowledge and those skills is another. The more proficient a teacher is in communication, the more effective the teaching-learning process.
- **Behaviour of the Teacher with the Student:** The teacher's behavior skills are a crucial element of their personality. The more affectionate, compassionate, and supportive the teacher's behavior towards students, the more effective the teaching-learning process.

**3. Factors Related to Subject Matter:** What is being taught to the learner also affects the teaching-learning process. Factors related to the subject matter can be outlined as follows:

- **Nature of Contents:** The nature of the content refers to its direct and indirect elements and its natural or artificial structure. Content that is direct and natural for one level of students may be indirect and artificial for another. The more direct and natural the content is for a level of students, the more effective the teaching-learning process.

**Organization of Contents:** If the content is logically organized from easy to difficult and presented in this manner, the teaching-learning process is effective. Additionally, organizing content from direct to indirect elements enhances the teaching-learning process.

- **Relation with Life:** The relevance of the content to the learner's current and future life and its utility level also affect the teaching-learning process. The more related the content is to real life, the faster students learn it.
- **Difficulty Level:** If the content is easy for the learner, the teaching-learning process is effective, and if it is difficult, the process is not as effective. The difficulty level is determined based on the learner's age, maturity, and prior knowledge. If the content is developed based on the learner's prior knowledge, the teaching-learning process is more effective.

4. **Factors Related to Teaching Methods:** The effectiveness of the teaching-learning process depends on how the teacher teaches the learner. Factors related to teaching methods can be outlined as follows: Top of Form

- **Suitability of Teaching Method:** Psychologists have highlighted facts about the psychology of infants, children, and adolescents, and based on these, various methods have been developed to enhance knowledge and skill development for different age groups. The more appropriate the teaching method used for a particular subject, the more effective the teaching-learning process becomes. For young children, stories, games, and songs are suitable methods; for adolescents, hands-on learning is appropriate; and for higher education students, methods such as experiments, research, reasoning, and logical approaches are effective.
- **Practice and Use:** Practice and application are two crucial factors in teaching methods. The more a teacher involves learners in practicing the knowledge and skills being taught and the more learners use what they have learned, the more effective and stable the teaching-learning process becomes.

- **Use of Teaching Aids and Technology:** Educational psychologists have shown that the use of teaching aids can make the teaching-learning process more lively and engaging. Nowadays, using various hardware and educational technologies (such as overhead projectors, televisions, and computers) can make the teaching-learning process even more interesting, enjoyable, and effective.
  - **Use of Co-curricular Activities:** In teaching certain subjects and training skills, co-curricular activities are of particular importance. For example, in teaching and developing language skills, poetry, stories, dialogues, speeches, debates, and dramas are highly significant. Using these activities can enhance the learning process.
5. **Factors Related to Environment:** The environment has a significant impact on the teaching-learning process. Environmental factors can be outlined as follows:

**Physical Environment:** It is often observed that children get tired more quickly in summer than in winter. Extreme cold, heat, or rainy weather can also disrupt the teaching-learning process. The presence of clean, fresh air, proper lighting, and effective communication and auditory arrangements at the teaching-learning site all affect the process. Inadequate fresh air and lighting can cause children to tire quickly, negatively impacting the teaching-learning process.

**Social Environment:** Social interaction plays a crucial role in the teaching-learning process. If children have an appropriate social and educational environment at home, in the community, society, and school, the teaching-learning process is more effective. Group dynamics, order, and discipline within the environment are also important.

**Time of Teaching and Learning:** The timing of the teaching-learning process affects its outcome. Morning time is suitable for teaching-learning in warm countries, while midday is preferable in cold countries. Additionally, taking breaks during the teaching-learning process is important as children cannot focus on one subject for long periods. Short breaks ensure better learning.

**Fatigue and Rest:** It has been observed that neither the teacher nor the learner can perform their tasks effectively when fatigued. Therefore, school schedules are designed to place difficult subjects first, followed by easier ones, with breaks in between for rest.

## Check Your Progress

1. How does the social environment affect the learning process? Explain.

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## 8.3 Learning Styles

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Learning styles refer to the approaches through which a learner understands or incorporates the provided information into their behavior. The approach a learner prefers for acquiring information is called their learning style. The concept of learning styles became popular in the 1970s, and many experts have critiqued it. In 1992, Neil D. Fleming and Coleen E. Mills explained the learning styles using the acronym VAK, where V stands for Visual, A for Audio, and K for Kinesthetic. They proposed that learners can be categorized into three types: visual, auditory, and kinesthetic. Additionally, they mentioned another style called the reading/writing method. They clarified that most people use multiple methods to understand information, and this approach is known as the multi-modal method, and learners using this approach are called multi-modal learners.

According to Coffield (2004), there are more than 70 learning styles. Some important ones are as follows:

1. Visual Learner
2. Auditory Learner
3. Verbal or Linguistic Learner
4. Physical or Kinesthetic Learner
5. Mathematical or Logical Learner
6. Social/Inter-personal Learner
7. Solitary/Intra-personal Learner

Here is a brief explanation of these styles:

### **Visual Learner**

Visual learners generally prefer to sit in the front rows of the classroom. They usually sit on the right side of the front rows to observe the presentation and support the learning process, thereby achieving higher learning outcomes. Visual learners learn by seeing, so teachers should use video clips, real objects, pICTures, flowcharts, diagrams, and symbols to explain new concepts. Long lectures are challenging for visual learners. They prefer using images instead of

words when taking notes and rely heavily on diagrams and flowcharts. If they have difficulty understanding a topic, watching a related video helps them understand it easily.

#### **Characteristics of Visual Learners:**

- They expect demonstrations from teachers.
- They learn easily through visual explanations.
- They make lists to organize concepts.
- They recognize words by sight.
- They often remember people's faces but forget their names.
- They have well-developed imaginations.
- They get distracted by movements happening around the classroom.
- Approximately 60% of learners are visual learners.

#### **Auditory Learner**

Auditory learners prefer to listen to understand any subject. They learn easily through lectures, speeches, audio recordings, or any other verbal communication. Auditory learners are good listeners. They can easily grasp information through events, stories, music, discussions, lectures, and dialogues. They prefer learning through hearing. These learners favor reading aloud over silent reading.

#### **Characteristics of Auditory Learners:**

- They expect verbal instructions from teachers.
- They find it easier to learn by listening.
- They prefer learning through dialogue, discussions, and speeches.
- They often remember people's names but forget their faces.
- They solve problems by talking them out.
- Their attention is distracted by noise around the classroom.
- They learn more using audiobooks.

#### **Verbal or Linguistic Learner**

Verbal or linguistic learners are typically those who learn best by reading books and taking their own notes. They prefer words over images, flowcharts, diagrams, and symbols. These learners are often bookworms who enjoy spending time in libraries reading. Some key characteristics of verbal learners are:

- They expect teachers to write all information on the board or provide them with a copy.



- They easily learn from written explanations.
- They organize concepts by studying various books.
- They learn more effectively by taking their own notes in their own words.

### **Physical or Kinesthetic Learner**

Physical or kinesthetic learners are those who need practical experiences to understand things. These learners gain information by physically feeling and experiencing things. Such learners have a higher potential to become good surgeons or dancers. They learn more from activity-based methods rather than just hearing or seeing. Often, physical learners are misdiagnosed with attention deficit and hyperactivity disorder (ADHD). Some key characteristics of physical learners are:

- They learn best when given the opportunity to engage in learning activities.
- They usually have high energy levels.
- They learn more while moving around.
- They partially understand the teacher's lecture.
- It is difficult for them to stay in one place and read.
- They prefer doing over seeing or listening.
- Young children in early grades are often physical learners.

### **Logical Learner**

Logical learners have a strong interest in mathematics and related subjects. They try to study all subjects through logic and reasoning. These students especially attempt to understand things logically rather than memorizing them. They explain their subjects logically and create mental maps of topics while studying.

### **Social Learner**

Social learners always prefer group study. They enjoy studying in groups rather than alone. If they don't understand a topic, they discuss it with their friends. These students often form a study group with some friends and discuss each topic together after studying to ensure a thorough understanding. This method helps them grasp topics and maintain interest.

### **Solitary Learner**

In contrast to social learners, solitary learners prefer to study alone rather than in groups. They choose quiet places for studying alone rather than group study. If solitary learners are asked to study in groups, they may find it difficult to understand topics collectively.

## Check Your Progress

1. What do you understand by a visual learner? Explain.
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## 8.4 Learning Style According to Kolb

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According to Kolb, the learning process consists of four stages: feeling, thinking, doing, and watching. He believed that whenever a person learns something, they simultaneously use only two of these methods, neither one, nor three, nor all four. They would use only two actions, for instance Feeling+Doing, Feeling+Watching, Doing+Thinking, or Watching+Thinking simultaneously.

According to Kolb's Experiential Learning Theory, learners go through a direct real and dynamic experience of the learning process. This experience provides them with reflective observation. Subsequently, this reflection is integrated into previous knowledge, transforming into abstract conceptualization. As a result, the educator aligns with experiences through new methods or actions and adds to their knowledge. Kolb clarifies his theory through the following outline:

1. **Diverger:** Learners of this type learn through feeling and watching. They can perceive things from different perspectives. They are very sensitive and rely more on watching than doing. They observe things, meticulously analyze them, and solve them in their imagination. They are interested in meeting people, often lost in their own thoughts, and are quite emotional and artistic. They perform better in real situations.
2. **Assimilator:** These learners learn through watching and thinking. They think about things from different perspectives. They are very analytical. They rely more on thinking than watching. These learners are interested in science, technology, and computers. Their approach is logical and argumentative. They are not interested in people but hold thoughts and ideas in high regard. They prefer to be lost in the world of thoughts and ideas. They prefer clarity over action and have a preference for clear and logical information. They prefer studying, listening to lectures, and observing models.
3. **Converger:** These learners learn through doing and thinking. They try to solve the problem themselves. They think deeply about every problem and try to solve it through

practical practice. They prefer learning by doing. They enjoy technical work. They have faith in action rather than theories. They like to try new experiences.

4. **Accommodator:** These learners learn more through doing and feeling. They want to do everything themselves and want to feel its intensity. They want to put their hands in everything. They are attracted to new challenges and work on new projects based on their past experiences. They take information from others and then experiment with it. According to Kolb, most learners are like this.

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## 8.5 Learning Outcomes

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After studying this Unit, you should have learned the following:

- Learning is inherent to human nature, but what humans learn is influenced by the environment.
- Humans can learn without an effective environment, but providing the desired environment is necessary for purposeful acquisition.
- The field of educational psychology researches the process of learning and individual differences among learners.
- A person's intelligence, inclination, interest, and behavior play a role in the actions they perform.
- Each learner has a unique approach and style of learning.
- The five important components of teaching and acquisition are the teacher, learner, subject matter, teaching method, and the instructional and acquisition environment.
- The most important component of the process of teaching and acquisition is the learner; the effectiveness of this process largely depends on the learner.
- Important factors influencing the learner in the process of learning include age, maturity, physical and mental health, intelligence, interest, consistency, inclination, behavior, level of motivation, and desired learning goals.
- Important factors influencing the teacher in the process of learning include the teacher's personality, knowledge, skills, teaching abilities, and understanding of the learner's behavior.
- Important factors related to the subject matter include the nature of the subject matter, its organization, relevance to life, level of difficulty, etc.

- Important factors related to teaching method include the effectiveness of the teaching method, practice and application, use of teaching aids and techniques, utilization of curriculum objectives, etc.
- Important factors related to the learning environment include the physical environment, social environment, time for teaching and acquisition, discipline, and comfort, etc.
- Acquisition style refers to the manner in which a learner comprehends information provided to them.
- The learner's preferred method of obtaining information is called their acquisition style.
- The concept of acquisition style became popular in 1970, and many experts criticized it.
- In 1992, Fleming and Mills explained the ways of learning, which were abbreviated as VAK. V stands for Visual, A for Auditory, and K for Kinesthetic.
- Fleming and Mills clarified that most people use a multimodal approach in understanding things.
- According to Coffield (2004), there are more than 70 styles of learning.
- Visual learners learn easily from image-based explanations, they often remember people's faces but forget their names, and they are distracted by movement and activity around the classroom.
- Approximately 60% of learners are visual learners.
- Auditory learners find it easier to understand things by listening, they prefer learning through discussion, debates, and speeches, and they often remember people's names but forget their faces. They are distracted by noise and commotion around the classroom.
- Verbal learners learn by reading books and making their own notes.
- Kinesthetic learners acquire information by sensing and experimenting with things using their body parts, they learn more when engaged in acquisition activities.
- Logical learners are highly interested in mathematics and related subjects, they try to understand all subjects through logic and reasoning.

- Social learners prefer studying in groups rather than alone, they often form study groups with a few friends and discuss each subject after reading it to understand it better.
- Solitary learners prefer studying alone rather than in groups, they like to study quietly in a secluded place.
- David Kolb introduced his acquisition theory in 1984.
- Kolb's theory consists of four stages: feeling, thinking, doing, and watching.
- According to Kolb, whenever a person learns something, they simultaneously use any two of these methods.
- Kolb stated that learners are of four types based on their learning style: Diverger, Assimilator, Converger, and Accommodator.
- Diverger learners learn more through feeling and observation.
- Assimilator learners learn more through observation and thinking.
- Converger learners learn more through doing and thinking.
- Accommodator learners learn more through doing and feeling.

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## 8.6 Glossary

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**Construct:** A concept or idea formed by combining different elements or variables.

**Factors:** Variables or conditions that influence a result or decision.

**Interest:** The feeling of curiosity or attraction towards something.

**Relation:** The connection or association between two or more elements.

**Dimension:** A measurable aspect or description of something.

**Interaction:** The mutual action between two or more entities.

**Dynamics:** Forces or factors that facilitate change or progress within a system.

**Kinesthetic:** Related to movement or bodily sensation.

**Fatigue:** Physical or mental tiredness resulting from prolonged effort or strain.

**Aesthetic:** Related to beauty or artistic qualities.

**Attract:** To draw someone or something's attention or interest.

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## 8.7 Unit End Exercises:

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### Objective Questions

1. How many components are there in teaching and acquisition in general? (a) Two (b) Three (c) Four (d) Five
2. What is the most important component of teaching and acquisition? (a) Learner (b) Teacher (c) Subject matter (d) Teaching method
3. Which of the following is not included in the factors related to the learner affecting the process of learning? (a) Learner's age and maturity (b) Learner's physical and mental health (c) Learner's curriculum and teaching skills (d) Learner's interest, consistency, and inclination
4. Which of the following is not included in the factors related to the teacher affecting the process of learning? (a) Teacher's personality (b) Teacher's teaching skills (c) Teacher's level of knowledge (d) Teacher's cross-curricular activities
5. Which of the following is not included in the factors related to the subject matter affecting the process of learning? (a) Nature of the subject matter (b) Organization of the subject matter (c) Curriculum and cross-curricular activities (d) Difficulty level of the subject matter
6. Which of the following is not included in the factors related to teaching method affecting the process of learning? (a) Effectiveness of teaching method (b) Teaching aids and techniques (c) Teacher's level of knowledge (d) Practice and application
7. Which of the following is not included in the factors related to the learning environment affecting the process of learning? (a) Physical environment (b) Social environment (c) Time for teaching (d) Cross-curricular activities
8. According to Fleming and Mills, which learner style is not included in the learning style? (a) Logical learner (b) Auditory learner (c) Visual learner (d) Kinesthetic learner
9. Visual learners prefer to sit in seats in the classroom. (a) Front (b) Back (c) Middle (d) Above all
10. Visual learners easily understand explanations based on ----- . (a) Logic (b) Speech (c) Images (d) Language

### Short Answer Questions

1. Discuss the factors related to the subject matter that affect the process of learning.

2. Describe the factors related to teaching method that affect the process of learning.
3. Explain the importance of factors related to the environment in affecting the process of learning.
4. Define the concept of learning style.
5. Shed light on the learning styles introduced by Fleming and Mills.
6. List the categorization of learning styles introduced by Coffield.
7. Describe the characteristics of visual learners.
8. Explain the characteristics of auditory learners.
9. State the characteristics of kinesthetic learners.
10. Explain the types of educators introduced by Kolb.

### **Long Answer Questions**

1. Elaborate on the factors influencing the process of learning.
2. Discuss the factors related to the learner and the teacher that affect the process of learning.
3. Illuminate the factors related to subject matter and teaching method affecting the learning process.
4. Discuss the importance of factors related to the environment in the learning process.
5. Clarify the concept of learning styles and categorize the learning styles introduced by Coffield based on Fleming and Mills.
6. Describe the characteristics of visual, auditory, and kinesthetic learners.
7. Define the characteristics of linguistic, logical, and social learners.
8. Identify the recognition of auditory, visual, and kinesthetic learners based on their characteristics.

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## **8.8 Suggested Learning Resources**

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1. Piaget, Jean. The Growth of logical Thinking from Childhood to Adolescence. N.Y.: Basic Books, 1958.
2. Singh, A.K. (2010). Educational Psychology. Patna: Bharti Bhawan Publishers and Distributors.
3. Kapil, H.K. (1991). Youth! Abnormal Psychology. Agra: Bhargava Publications.
4. Khan, N.A. & Husain S.M. (2019). Aspects of Educational Psychology: Aligarh. Educational Book House.

## **Unit 9: Approaches to Teaching at Tertiary Level**

### **Structure**

#### **9.0 Introduction**

#### **9.1 Objectives**

#### **9.2 Behaviouristic Approach**

##### **9.2.1 Classical Conditioning Learning Theory**

##### **9.2.2 Trial & Error Learning Theory**

##### **9.2.3 Operant Conditioning**

#### **9.3 Cognitive Approach**

##### **9.3.1 Jean Piaget Theory of Cognitive Development**

#### **9.4 Constructivist Approach**

##### **9.4.1 Bruner Theory of Teaching & Learning**

##### **9.4.2 Vygotsky Theory of Learning**

#### **9.5 Connectionist Approach**

##### **9.5.1 Concept & Characteristics**

##### **9.5.2 Basic Principles**

##### **9.5.3 Educational Implications**

#### **9.6 Critical Appraisal of Behaviouristic, Cognitivist, Constructivist, and Connectionist Approach & Classroom Implications**

#### **9.7 Learning Outcomes**

#### **9.8 Glossary**

#### **9.9 Unit End Exercises**

#### **9.10 Suggested Learning Resources**

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### **9.0 Introduction**

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Teaching, in general terms, is the process of facilitating learning by a teacher. It cannot be expressed in simple words. Teaching is a specialized application of knowledge, skills, and attributes that plays a significant role in fulfilling the educational needs of individuals and society. Teaching is a socio-cultural and ethical practice that is helpful in bringing about changes in society. The ultimate purpose of teaching is the development of the learner. Different approaches to teaching are employed to implement teaching in various ways. In this unit, we will discuss teaching approaches from different schools of thought.



Teaching is a complex process because it is both an art and a science. Its purpose is to impart knowledge and understanding and to promote skills. Teaching methodology, especially with regard to lesson planning, curriculum, style, and techniques, is related to teaching and acquisition. Teaching and acquisition approaches derive from acquisition theories that emerged during the 20th century. These theories are categorized into four schools of thought or approaches as follows:

1. Behaviouristic Approach or Behavioural Approach
2. Cognitive Approach or Perceptual Approach
3. Technical or Constructivist Approach
4. Connectionist Approach

These approaches explain under what conditions learning occurs and what conditions are conducive to learning. They elucidate the principles derived from experiments conducted in the context of acquisition and the relationships between these principles and their sub-principles.

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## 9.1 Objectives

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The objectives of this Unit are to:

- understand behaviouristic approach and its significant theories.
- understand cognitive or perceptual approach and its significant theories.
- understand constructivist approach and its significant theories.
- understand connectionist approach and its significant theories.
- present a critical appraisal of behaviouristic, cognitivist, constructivist, and connectionist approaches and their implications in the classroom

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## 9.2 Behavioristic Approach

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**Behaviorism:** Behaviorism is a unique type of approach founded by Watson. According to him, the concept of consciousness presented by functionalists and structuralists is unprovable and cannot be assessed scientifically because it is a mere idea that cannot be seen or touched. If we consider psychology as a science of behavior, then we must only accept observable behaviors. Other concepts like mind, soul, shapes, and thoughts are dismissed.

Behaviorism primarily discusses observable and assessable aspects of human behavior. It limits itself to observable actions involving thinking, feeling, etc. Thus, behaviorists do not focus on the feeling of fear but rather on the changes in observable behavior caused by fear, such as changes in heart rate, blood circulation, blushing, or turning pale, which are observable changes and can be measured.

Therefore, it can be said that behaviorism considers acquisition as a mechanical process. This means that to express behavior, an individual needs to mobilize their organs and senses. Experimentation refers to the process through which information or skills are acquired. Such actions occur in individuals when the relationship between stimuli and responses is revealed, meaning being affected by stimuli and naturally expressing a response is an experiment. The relationship between response and stimuli is established, and its effectiveness depends on practice. This is called acquisition.

#### **Characteristics of Behavioristic Approach:**

- Human and animal observable behavior can be studied and successfully analyzed.
- More emphasis is given to the influence of environmental conditions or stimuli on behavior.
- Understanding of conditioning becomes vital because it is based on the relationship between stimulus and response.
- Conditioning is a crucial method in behaviorism, where existing conditions are associated with conditional behavior expressions from past conditions.
- Techniques and programs for modifying and editing behavior emerged from this approach.
- Behavioristic concepts such as feelings, emotions, and perceptions are not accepted, thus leading to new ideas like conditioned habits and acquisition in both psychology and educational fields.

#### **9.2.1 Classical Conditioning Learning Theory (Pavlov)**

Behaviorism emerged at the end of the 19th century when a psychologist, Ivan Pavlov, conducted experiments on animals. The famous experiment conducted by Pavlov involved a dog. In this experiment, he concluded that learning occurs through association.

Pavlov conducted an experiment where dogs salivated upon seeing meat, but if a neutral stimulus, like a bell, was used repeatedly along with the meat, the dog's salivation response was

triggered only by the bell's sound. It became evident that the dog associated the bell's sound with food, and therefore, a conditioned response was elicited. This can be demonstrated as follows:

- **Unconditioned and Conditioned Stimuli and Responses (UCS and CS, UCR and CR):**
  - Food is an unconditioned stimulus, and the bell is a neutral stimulus. The dog's salivation to food is an unconditioned response, while salivation to the bell after association becomes a conditioned response.
- **Acquisition and Extinction:**
  - Acquisition refers to the process of acquiring conditioned responses through repeated associations of stimuli. Extinction occurs when conditioned stimuli are presented without food, leading to the cessation of conditioned responses over time.

**Application of Classical Conditioning Theory:** This theory helps us understand that people learn through association, which has significant implications in various fields such as education, advertising, and therapy.

### **Principles of Classical Conditioning Learning**

This theory of learning has given rise to several essential concepts and principles, as mentioned below:

i. **Loss of Responsiveness:** Experiments have shown that if a conditioned stimulus is presented repeatedly without reinforcement, the conditioned response diminishes gradually until it disappears entirely. This process is called extinction.

ii. **Immediate Recovery:** Through Pavlov's experiments, it became evident that after the extinction of a response, the conditioned behavior could be recovered, albeit with reduced intensity. This phenomenon of the reappearance of the conditioned response after a period of rest is called spontaneous recovery.

iii. **Stimulus Generalization:** When a specific response is elicited by a particular stimulus, and the same response is evoked by another stimulus similar to the original one, it's termed as stimulus generalization. For instance, if a dog salivates upon hearing a bell, it might also salivate upon hearing a similar sound.

iv. **Stimulus Discrimination:** This is the opposite of stimulus generalization. Over time, an individual learns to differentiate between stimuli and respond selectively to specific ones. This process is called stimulus discrimination.

### 9.2.2 Trial & Error Learning Theory

The renowned psychologist E.L. Thorndike was the first to propose the trial and error learning theory. Based on his experiments, he formulated several laws, which are outlined below:

i. **Law of Readiness:** This law emphasizes the importance of readiness in learning. Thorndike proposed that if an individual is prepared for learning and is provided with an opportunity for acquisition, the learning process becomes more efficient and satisfying. The presence of motivation and purpose prepares individuals mentally and physically to cope with situations and achieve goals.

ii. **Law of Effect:** According to this law, learning occurs when actions are satisfying, and the learner experiences pleasure. If an individual encounters unsatisfactory experiences, learning does not take place. Therefore, effective teaching must be rewarding to facilitate learning; otherwise, it may not be successful.

iii. **Law of Practice:** This law is also known as the law of use and disuse. It consists of two parts:

- **Law of Use:** When a change in behavior is established through practice, the association between the occasion and the response becomes stronger. In simple terms, practice or repetition strengthens acquisition and facilitates recall.
- **Law of Disuse:** If a modifiable relationship is not established between an occasion and a response within a certain period, the strength of acquisition decreases. In other words, when efforts and practice are discontinued, memory becomes less robust. All motor skills, such as handwriting, memorization of musical compositions, and arithmetic tables, are remembered through consistent effort and practice. When practice is discontinued, there is a decrease in proficiency.

These laws of acquisition are guiding principles for both learners and educators. By utilizing them effectively, educators can achieve their teaching objectives successfully.

### 9.2.3 Operant Conditioning

Operant conditioning theory was introduced by B.F. Skinner, a renowned American psychologist. He rebelled against the reflex-response mechanism and emphasized that we should not wait for actions to occur naturally in life. Rather than being passive recipients of the environment, humans have the ability to manipulate the environment according to their own preferences. Therefore, it is not necessary that the manifestation of a response is solely

dependent on a specific stimulus; rather, individuals can determine their behavior by acting on the environment themselves.

Skinner initiated this theory by observing and further studying the experiments of E.L. Thorndike. He concluded from initial experiments that the occurrence of a behavior is based on the consequences. Behaviors are reinforced by the consequences of broad actions. An individual's practical actions are responses to the environment around them.

For operant conditioning experiments, Skinner used his own methods and custom-made equipment. He conducted experiments on pigeons, constructing a chamber with a button. Whenever the pigeon pecked the button, it received food. Initially, the food was placed above the button so that when the pigeon pecked the button, it would get food. In this process, food acted as a reinforcement for the action, and the behavior of obtaining food became conditioned. Food acts as a stimulus, and the process of obtaining it is called a response. The animals' behavior becomes conditioned through reinforcing actions, such as obtaining food.

In this process, the relationship between the stimulus and response is crucial, and repeated presentation of the stimulus reinforces the behavior. Assistance is essential in this theory.

### **Principles of Operant Conditioning**

1. **Shaping:** It refers to arranging actions in a sequence that makes it possible to achieve goals. For example, pigeons were rewarded for every correct action. Their correct actions were:
  1. Pecking.
  2. Looking towards the button.
  3. Moving forward.
  4. Pecking the button. In this way, their correct actions were reinforced, leading to a change in behavior or response.
2. **Chaining:** It involves arranging desired behaviors or tasks into small units or steps, making effective learning possible. It's a kind of chain reaction or continuous action and reaction series in which one response leads to another and becomes the cause of the third response. Thus, a series of chained reactions is formed. For example, conversing among people is an example of this type of action. When we see someone we know and we recognize them, it works as an effective stimulus or sequence of actions for us. We greet them, and they greet us back. Their response to our greeting not only serves as a

reinforcement but also creates a stimulus for us to shake hands or hug them. Meaning, one response leads to another, and this sequence continues, meaning that the behavior adopts a sequential pattern of action and reaction.

3. **Discrimination & Cueing:** It refers to an action in which behaviors are established using cues or information. That is, the learner learns to discriminate between who should respond and who should not by using cues. It holds significant importance in the educational field, where caution is required in giving feedback to students for displaying a response.
4. **Generalization:** When a specific response is elicited by a particular stimulus, and the same response is evoked by another stimulus similar to the original one, it's termed as stimulus generalization.

### **Check Your Progress**

1. Explain the principle of "discrimination and cueing" in operant conditioning.

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2. Describe the principle of "immediate recovery" in classical conditioned learning.

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## **9.3 Cognitive Approach**

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As it is evident that every individual, despite common heritage and environment, differs in the strength of their perception due to emotions and feelings, it is understood that each person has their own unique world, differing to a considerable extent from others, and the fundamental reason for this difference lies in our cognitive process and its mechanism. Apart from this, different situations and events lead to a different perspective on perceiving and understanding things. According to the cognitive school of thought, cognition involves emotions, attention, knowledge, or information retention, which means remembering, decision making, and reasoning.

In the cognitive approach, the mind and all its associated mental factors are central. Cognitive approach aims to understand all actions and processes involved in acquisition that play some role. If a teacher understands how students perceive or understand information, they can structure and organize the teaching process in a way that makes learning more effective. Cognition is studied from the point of view of the mind, how it obtains information and

processes it to include it in memory. This theory is contrary to behaviorism, which emphasizes the formation or modification of behavior.

According to cognitive theory, the learner is an active participant in the acquisition and the mind acts as a computer, where information is input and processed in the mind and stored, available for future use. Thus, we can say that timely retrieval of information can be done more effectively. Acquisition in the cognitive approach is a complex process, and acquisition means a change in cognitive structure. Acquisition transforms existing information or knowledge into a new form or advances it.

These changes generally occur in three ways:

1. Differentiation
2. Generalization
3. Restructuring

Key Points of Cognitivism:

1. The mind is not a black box but rather the center of mental actions.
2. Acquisition means the retrieval of existing stored information or knowledge.
3. Guidance generally focuses students on their part and makes information meaningful in their minds so that its storage and retrieval can be done correctly when needed.
4. Schema is a representation of prior knowledge in the mind.
5. Balance refers to a mental state where our mind is in a quality before learning something new.

Different types of cognitive acquisition theories have emerged according to the cognitive school of thought, including:

1. Jean Piaget's Theory of Cognitive Development
2. Robert Gagne's Theory
3. Insight Theory of Kohler
4. Albert Bandura's Social Cognitive Theory

### **9.3.1 Jean Piaget's Theory of Cognitive Development**

Jean Piaget's cognitive development theory is of great importance. This theory has had a significant impact on thinking or cognition. Piaget was initially a biologist, but later became interested in epistemology. Piaget's main purpose was to understand the process of thinking and

understanding in children. Is the acquisition of intelligence like a continuous operation of a biological system? In which a structure comes into existence, in the same way, knowledge is also a practical process that occurs between acquisition and the environment. According to Piaget, acquisition occurs through three types of actions:

1. Attraction
2. Adaptation
3. Balance

Every person has a mental structure around them that keeps track of their surroundings, which Jean Piaget calls a schema. It is the basic unit of cognition, and changes in it or the basic structure occur with age or through two-way cognitive action.

1. **Assimilation:** This is the process in which new information is incorporated into existing information, meaning adding new information to the basic structure. For example, a child familiar with the schema of sucking, grasping, and holding becomes aware of the new action when fed from a bottle. In this new action, the child faces no difficulty.
2. **Accommodation:** This refers to the process of incorporating information for which our basic mental structures, i.e., schemas, are not available but rather adapting existing schemas to new information, creating new schemas, and modifying old schemas. For example, the schema of sucking will change according to the child's age; now, instead of sucking, the child will perform the action of drinking from a glass or using a spoon.
3. **Equilibrium:** This is a process where the mind attempts to fit new information into its old schemas to maintain mental balance. Due to the non-alignment of old schemas with new information, imbalance occurs, so the mind actively works to modify the old schemas. This is called equilibrium.

Equilibrium is such a process of mental development without which an individual cannot flourish mentally because it is the process where balance is maintained between new and old perceptions and experiences, and it plays an important role in eliminating the effects of imbalance.

Jean Piaget has clearly delineated four important stages of cognitive development, through which a teacher can understand to what extent a child has the ability to think or perceive, so that they can present information in the same way during teaching and also assist those learners whose cognitive schema is not developing according to age or degree.



1. **Sensorimotor Stage:** In this stage, children acquire information based on sensory and physical movements. As we know, awareness of the environment (the presence of objects) is not so strong in the early years because, at this age, children have a "out of sight, out of mind" schema where attention can be diverted away from anything. However, relatively older children will resist this missing thing because it is already stored in the schema and can be seen, or it can be said that children have stabilized the concept of "the existence of constant things."
2. **Preoperational Stage:** In this stage, children use signs, words, etc., to interact with the environment so that they can contemplate about them. They learn that if something is missing, it can be present again. The ability to think in symbolic terms about objects fosters only to the extent of thinking unidirectionally. In this stage, children fail to understand the "conservation of substances," an essential principle indicating that the quantity or number remains the same even when something is added or subtracted.

Another characteristic of this stage is that children become egocentric and view others' experiences from their own perspective, meaning that the child is the center of the world; therefore, Jean Piaget called the thinking or reasoning of children at this stage a "logician's nightmare." Hence, it is evident from the name of this stage that the child is in the initial stages of logical and adult-like cognitive action.

**Formal Operational Stage:** As the name suggests, in this stage, children have the ability to perform formal mental operations or actions given to them.

- **Logical Understanding of the Physical World (Stability):** Elements can be transformed or changed in shape, yet their initial characteristics can be preserved (Conservation). These changes can be reversed (Reversibility).

Children who found it difficult to understand the principles of conservation in the preoperational stage can now solve the problems of conservation through the three basic aspects of attention: Identity, Compensation, and Reversibility.

**Classification** is another important step through which a child gains competence in this stage. The process of arranging objects from small to large or from large to small is a process of classification and sequence. In this stage, a child becomes capable of a complete and logical thinking system through the steps of classification and sequence, holding a logical system of thought limited to the extent of natural objects in present situations.

**Formal Operational Stage:** According to Jean Piaget, formal operational approaches are different possibilities created in a systematic manner for certain hypothetical situations. In formal operational approaches, all steps or operations that we consider with scientific perspectives and establish assumptions are included. Children at this stage have logical thinking; they have the ability to think and understand things in abstract ways. The ability to think hypothetically and analyze one's own thoughts brings some interesting results for adolescents because they think about a non-existent world and create the best possibilities. Such students can think about an ideal world.

**Merits of Cognitivist Approach:**

1. This approach highlights students' mental processes in teaching.
2. With this approach, the construction or structure of cognitive memory is formed in the mind for acquisition, and this structure performs tasks such as perception, operations, and reconstruction.
3. This approach enhances clear concepts and the ability to think in new ways, which fosters creativity.

**Demerits of Cognitivist Approach:**

1. This approach emphasizes mental action and thought too much; it is an unclear concept in itself.
2. This approach has limited human behavior to only mental action, memory, attention, and perception.
3. This approach compares human mind with a computer, but mental action is a much more complex system than a computer.

**Check Your Progress**

1. Explain the merits of the cognitivist approach.
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## **9.4 Constructivist Approach**

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The constructivist approach presents a new perspective in education and psychology. It is associated with epistemology, the study of knowledge. According to this approach, humans construct their understanding of all subjects and refine their knowledge based on past

experiences. When confronted with new information or knowledge, individuals engage in a process of negotiation and reconstruction, integrating it with their existing knowledge and experiences. Learning is not seen as something that is simply transmitted from teacher to student, but rather as an active process in which learners construct meaning and understanding themselves. The role of the teacher is crucial in guiding students through this process, asking questions, providing appropriate materials, and facilitating interactions. In the constructivist approach, students are active participants in their own learning, asking questions, expressing their interests, and engaging in various forms of interaction. Additionally, students develop decision-making skills, becoming more autonomous in their learning journey.

### **Historical Perspectives of the Constructivist Approach:**

The roots of the constructivist approach can be traced back to the 18th century philosopher Giambattista Vico, who first proposed that humans can better understand something when they themselves have constructed it and actively engaged in its acquisition. Following Vico, John Dewey placed experiences at the center of education, emphasizing the continuous process of reconstructing and organizing experiences as the essence of learning. Building on Dewey's ideas, Jean Piaget, an expert in developmental psychology, introduced concepts such as assimilation, accommodation, and equilibrium, laying the groundwork for the constructivist approach.

Numerous scholars then began working in the direction of the constructivist approach, with figures like Vygotsky and Bruner playing significant roles. The constructivist approach emphasizes:

- Being rooted in practical activities.
- Acquisition being based on learners' prior knowledge and experiences.
- Acquisition being constructed based on existing facts and concepts.
- The importance of social interaction in learning.
- Knowledge being constructed rather than transferred.

Constructivism is not merely about "learning by doing" but also about engaging students intellectually and socially in the learning process. Therefore, students actively participate in activities, delve into the depth of the subject matter, understand its significance, and construct knowledge based on their observations and experiences.

### **Role of the Teacher in the Constructivist Approach:**

In the constructivist approach, the role of the teacher is crucial. Teachers directly engage students by asking questions to ensure that students are actively acquiring knowledge. Teachers facilitate students' learning by providing appropriate materials and making sure that students are comfortable.

When teachers teach students, they, in turn, learn from them. Students show teachers how they learn, which is beneficial for teachers to observe and listen attentively, as understanding students' experiences can help teachers plan meaningful activities.

While the constructivist approach encourages self-directed acquisition, the role of the teacher remains significant. Teachers are responsible for providing students with appropriate and relevant materials tailored to their mental abilities and needs.

### **Role of Students in the Constructivist Approach:**

In the constructivist approach, students remain active learners. They take control of the acquisition process, express their opinions fearlessly, ask questions, show interest in the subject matter in various ways, and initiate interactions. Furthermore, students develop decision-making skills, which empower them to become independent learners.

### **Advantages of Constructivist Approach:**

- **Direct and Uninterrupted Acquisition:** Learning is a direct and uninterrupted process.
- **Students Construct Knowledge Based on Experiences:** Students construct their knowledge based on their experiences and situations, making their acquired experiences effective and long-lasting.
- **Focused Learning:** This approach keeps learners focused.
- **Learning to Work in Groups and Creating Democratic Practices:** Students learn to work in groups and develop democratic practices.
- **Keeps Students Active and Engaged:** It keeps students active and engaged.
- **Increase in Self-Confidence and Decision-Making Skills:** It increases self-confidence among students and promotes decision-making skills.
- **Better Understanding Due to Self-Construction of Knowledge:** Since students construct their own knowledge, their understanding of the material is better.
- **Facilitates Higher-Level Thinking in Students:** It helps in fostering higher-level thinking in students.

- **Improvement in Problem-Solving Skills:** It enhances problem-solving skills.
- **Social Skills Developed Through Group Work:** Social skills are developed through group work.
- **Improved Relationship Between Students and Teachers:** There is an improvement in the relationship between students and teachers.
- **Each Student Has Their Own Theory and Learns at Their Own Pace:** Each student has their own theory and learns at their own pace.
- **Shift from Teacher-Centered to Student-Centered Decision Making:** Previously, decisions in the classroom were made by the teacher, but now, this approach provides opportunities for students to make decisions.

#### **Limitations of Constructivist Approach:**

- **Lack of Prior Knowledge Hinders New Acquisition:** Lack of prior knowledge hinders new acquisition in this approach.
- **Difficulty in Group Work Due to Individual Differences:** Students face difficulties in group work due to individual differences.
- **Increased Time Consumption and Incomplete Syllabus:** Time consumption increases, and the syllabus may remain incomplete.
- **Student Autonomy Can Lead to Noise and Distraction:** Since students control the acquisition process, noise and distraction may occur, making it difficult for the teacher to control the students.

#### **9.4.1 Bruner Theory of Teaching & Learning**

Bruner's Theory of Acquisition and Teaching divides the educational process of children into three different stages: enactive, iconic, and symbolic. In the light of these stages, children construct knowledge and their ability to understand and retain increases.

**1. Enactive:** In this stage, children learn through movements and actions, which is also called "action-based" expression. They acquire knowledge by interacting with their environment and working with objects.

**2. Iconic:** In this stage, children learn through images and models, termed as "iconic" expression. Imaginative elements form the basis here, involving both visualization and observation.

**3. Symbolic:** This stage is where children develop the ability to think abstractly. They encourage ambiguities and use language to express their experiences. Verbal expressions are

evidence of intellectual abilities. Students can describe an event or the actions of an experiment in verbal detail. Symbolic activity revolves around language.

**Spiral Curriculum:** This curriculum refers to teaching complex material in a simple-to-complex manner. As the learner progresses from one stage to another, the concept of any material should be presented in a simple-to-complex manner, so that the learner grasps the concept at the level and ability of the student. According to Bruner, the quality of the structure (text) relies on the ability to make information easy, which establishes new assumptions and adds possibilities for change and exchange. Such a structure should always correspond to the level and ability of the student.

In other words, if somewhere the construction of knowledge should be arranged in such a way that the learner understands it immediately, teaching should be decorated with concrete examples. Such examples should be provided from the environment. Relevant new information should be provided from previous information.

Bruner emphasized the centrality of language in fostering intellectual growth, stating that cultural experiences play a significant part in determining the mode of presentation. Various means of worldly awareness and cultural effects are essential to expedite acquisition and comprehension, so that students are not expected to prepare for delegation educationally.

#### **9.4.2 Vygotsky's Constructivist Learning Theory**

According to this theory, learners should be actively engaged in the acquisition process so that they can effectively acquire knowledge. Simply memorizing the information provided by the teacher is not the goal of teaching. This theory emphasizes that students acquire knowledge better under the guidance of teachers and through collaboration with peers, constructing knowledge themselves.

A key principle of Vygotsky's theory of acquisition is the Zone of Proximal Development (ZPD), which is the area between the actual level of development and the potential development level. ZPD encompasses many tasks and abilities. Learning on one's own and learning at a particular time are very difficult. In order to acquire skills and abilities in these tasks, the assistance or support of someone knowledgeable, skillful, or experienced is needed. This support or assistance is called scaffolding. ZPD has two limits: a lower limit where problems are completed without any assistance or support and an upper limit which signifies the level of achievement that the individual reaches with the help of skilled or experienced individuals.

Vygotsky stresses that the supporters only facilitate the task, they do not do the task. This theory is based on the idea that if students are provided with more guidance and support, they will become dependent on it.

According to Vygotsky, the nature of acquisition is social, and a child learns through social interactions. All the characteristics that make teaching and acquisition effective are present in the constructionist approach. This theory has attempted to bring about a new revolution in teaching and acquisition in the modern era. According to him, the teaching method and acquisition process should take into account the inclinations and interests of the students. The teaching method should produce the following abilities:

- Reflective thinking
- Knowledge constructor
- Cognitive apprenticeship-based
- Creative thinking
- Problem solver

This means that students construct knowledge through their own experiences and observations. Previous knowledge acts as an aid and assistant in the construction of knowledge. Social and personal experiences influence their knowledge.

**Check Your Progress:**

1. Explain the concept of Zone of Proximal Development.

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2. What is meant by a Spiral Curriculum? Explain.

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## **9.5 Connectionist Approach**

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### **9.5.1 Concept and Characteristics:**

**Concept:** The connectionist approach is a set of perspectives in the fields of artificial intelligence, psychology, neuroscience, and philosophy of mind that presents mental or behavioral phenomena as emergent properties of interconnected networks of simple units. Connectionism takes many forms, but the most common form uses the neural network model.

Connectionism is a perspective on the study of human perception that uses mathematical models called connectionist or artificial neural networks. These models often come in the form of highly interconnected units resembling neurons. Connectionism and computational science do not have a clear division between them, but connectionists tend to focus more on high-level cognitive processes rather than detailed aspects of neural functions. Examples include perception, memory, comprehension, and reasoning.

At the end of the 20th century, during the theoretical rise of connectionist theories, its proponents aimed to transform theoretical appeals into references and sentences with formal principles. During the spread of neural activity with the facets of scientific representation, connectionism emerged in the 1940s and received significant attention until the 1960s. However, significant flaws in connectionist modeling techniques emerged quickly. By the 1980s, connectionism did not undergo a constant revival. During the late 20th century, connectionism appealed to many people studying perception through computational artifacts as an alternative to the classical perspective inspired by the mind. Like the classical perspective, connectionism has influenced a large group of naturalistic philosophers and two vast camps were in conflict over whether connectionism could resolve central conflicts related to the mind, language, rationality, and knowledge. Recently, connectionist techniques and concepts have helped influence philosophers and scientists who maintain that human and non-human perception is best expressed without the internal representation of the world. In fact, connectionist techniques have been widely accepted on a large scale, to the extent that some people now label themselves as connectionists. This success of connectionism indicates its viability.

**Characteristics:**

- A distinguishing feature of the connectionist approach is that computational operations are carried out socially and in parallel rather than sequentially, as in rule-based models and most types of computer programs. They are not carried out through a series of approximate calculations like in most forms of rule-based models and computer programs but rather through associative and parallel processing.
- Experiments with this type of model have demonstrated the ability to learn skills such as reading facial recognition and constructing simple grammar. Philosophers have found connectionism interesting because it promises to provide an alternative to classical theories of mind.



- It is widely believed that the brain is similar to a digital computer performing symbolic computation on a digital computer.
- Some of the benefits of connectionist perspectives include cognitive proximity for vital neural networks, low demands for natural construction, and the ability to include excellent degradation.
- Connectionist approaches have much in common with information processing. It focuses on increasing the power of association between stimuli and responses, which becomes the cause of activity, progress, or interest. However, it does not concern itself with regulated or new organization based on rules.
- The success of deep learning neural networks in the past decade has greatly increased the popularity of this perspective. However, the complexity and scale of such networks add to interpretational issues in explanatory models. Many people have seen connectionism as an alternative to classical theories of mind based on symbolic computation, but the two perspectives agree to some extent, starting from their inception. They have a lot in common.

### **9.5.2 Basic Principles**

The central principle of connectionist approach is that mental phenomena can be expressed through the interconnected network of simple and often uniform units. The configuration of connections and units can vary from model to model. For example, the units of a neural network can represent neurons, and connections can represent synapses, as in the human brain.

- 1. Activation Spreading**
- 2. Neural Networks**
- 3. Biological Realism**
- 4. Learning**
- 5. Parallel Distributed Processing**

### **9.5.3 Educational Implications**

i. Implementing this approach within educational systems can focus students' attention on various aspects of understanding, retention, and reasoning. ii. With this approach, we can store information in memory. The learner processes this information in a deeper and more meaningful way, which is then presented in context. iii. This framework is multi-layered and has different

degrees of specificity. New information can be integrated with it. In contrast, it can be edited to fit or integrate with existing frameworks. iv. It holds deep implications for information and processing, as it can provide a fundamentally new theory for education. It advocates for the use of a structured curriculum.

**Check Your Progress:**

1. Where do most categories come from in the neural model (network model)?
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## **9.6 Critical Appraisal of Behaviouristic, Cognitivist, Constructivist, and Connectionist Approaches & Classroom Implications**

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**Behaviouristic Approach & Classroom Implications:** As we know, behavior is essentially a response to stimuli. The nature of behavior depends largely on the type of stimulus and the environment. The environment also provides stimuli. It is essential for behavior to be observable. The individual must mobilize their organs and limbs to express behavior. Being influenced by stimuli and naturally expressing a response results in the acquisition of information, skill, or both.

Flexibility is provided through laws and principles to encompass their effects. This is actually a virtue. Those who act on these laws sometimes encounter difficulties. These difficulties hinder the uniform application of these laws and impose limitations. The application of behaviorism's theory can also face difficulties. A brief overview of these is as follows:

1. In this approach, human behavior is presented in a mechanical manner. The mechanical style of behavior appears non-natural due to the variations in behavior.
2. Human observable behavior is dependent on emotions, perceptions, and stimuli. Its free estimation is immeasurable.
3. Applying the results obtained from experiments on animals and the principles derived from them to humans and expecting uniform results is not possible.
4. Elements of construction and inheritance, which are extremely important, have been completely overlooked or given no importance.
5. Behavior has been understood merely as an acquisition, and hereditary effects have been ignored.

6. Human cognitive behavior has not been given a mechanical act, denying the possibilities of influential acts of behavior.
7. Human traits such as creativity, curiosity, etc., have been overlooked or given no importance.
8. Shortcomings have been committed in estimating human abilities and mental capacity in the style of behavior acquisition. Therefore, it cannot be accurately assessed in the true sense for students.

The behaviorist approach emphasizes observable behavior in the study of behavior, rejecting the internal experiences of humans, i.e., thoughts and emotions, as they cannot be studied directly. Behaviorists have introduced a scientific method for studying behavior, the basis of which is the observable study of behavior.

Behaviorism places greater emphasis on the importance of the environment in shaping human behavior, minimizing the role of innate and hereditary elements. Therefore, children learn any new behavior through classical or operant conditioning, meaning that when we are born, we are like blank slates.

### **Classroom Implications**

- Classroom implication examines the observable actions of students and ensures that students are acquiring knowledge through effective means.
- The focus of classroom implication is on organizing the conditions of reinforcement. Teachers consistently assess whether students are acquiring knowledge correctly or incorrectly. This assessment can be made by giving students homework or assignments or by assessing their obtained grades, etc.
- Some experts believe that this approach overlooks students' individuality and focuses only on the study of physical movements rather than mental processes. Therefore, it cannot accurately determine students' acquisition of knowledge.
- Under the framework of classroom implication, the given laws of acquisition are of great importance in lesson planning and teaching: the law of readiness is the foundation of motivation, the law of exercise or repetition is the basis of slow acquisition, and the third law, the law of effect, emphasizes the importance of rewards and punishments in learning.
- All these laws emphasize the importance of motivation. Without motivation, no acquisition is possible. Thorndike's three laws highlight three aspects of motivation, with the law of readiness being the most important. Without the law of readiness, the laws of

effect and exercise become ineffective. Therefore, it is essential for the teacher to create a motivating environment for acquisition and to instill a thirst for knowledge in students. The teacher should not expect students to actively participate in learning or believe that someone can work more than their capabilities under the influence of motivation.

- The laws of acquisition serve as good guiding principles for students and teachers in teaching. Through their scholarly use, teachers can achieve their teaching objectives successfully.

### **Conditional Teaching**

- Conditional teaching is an essential practice, and for effective acquisition in the classroom, this approach holds special importance. In this regard, the following points should be considered:
  - i. Strengthening the desired behavior.
  - ii. Ignoring undesirable behavior through discontinuity.
  - iii. Mild punishment can be given to those students who show no interest in work, and incentives or motivation may become ineffective. It is essential to adhere to the principles of punishment; otherwise, its consequences can be harmful.

### **Critical Appraisal of Cognitivist Approach & Classroom Implications**

- This approach is entirely different from the behavioral approach. According to this approach, acquisition is an internal psychological process. In it, behavior is a complete external action. Perception, formation of concepts, attention, thinking, reasoning, judgment, evaluation, and problem-solving, etc., are all psychological functions. The student first perceives the situation, then considers the relationship between the situation and the future, and then decides on action to deal with the situation or solve the problem. This approach explained the process of action through a systemic statement. In this system, whatever stimulus is present in the environment is called input, which is the functioning of the mind (process), and the result of mental functioning is called output.
- This approach has made it possible to match the role of human's higher mental or perceptual abilities with the environment and has emphasized the study of mental manifestations and functioning in relation to behavior.

### **Limitations**

1. Direct teaching is not included.

2. Providing exercise to each child according to his suitability is unnecessary and impractical.
3. Students cannot feel contradictions in their statements.
4. Students may lack confidence in their abilities to complete a task.
5. Many students cannot remain engaged in mere thoughts, and some cannot perform useful scientific activities.
6. Due to the highly organized nature of the acquisition process, students may face difficulties in learning new information or adapting to their surroundings.
7. This approach has been viewed as a reductionist approach, for example, it has limited human behavior to mental actions, memory, attention, etc.

### **Application in the Classroom**

1. The teacher should ensure familiarity with the student's stage and level of understanding and prepare teaching plans accordingly.
2. Organize activities in the classroom that provide students with maximum opportunities and allow them to establish various relationships or collaborations for which they are capable.
3. Provide students with opportunities to strengthen their knowledge personally.
4. Classroom training should be organized in such a way that students present scientific summaries and reflective summaries through construction, attraction, and consent.
5. It is essential to stimulate perceptual activity through experiences.
6. Children can be mentally gifted even without physical activity.
7. Teachers should not exceed more than twenty minutes for their lecture, and taking breaks during lectures contributes to effective acquisition.
8. The subject matter should be presented in multiple ways so that long-term and lasting memory can be achieved.
9. Students should be encouraged to review headings or concepts after reading them so that they can understand or comprehend them better.
10. Key words and phrases should be used for memory retention.
11. Information should be presented in small units so that memorization is not difficult. Students should be encouraged to make informational outlines or summaries at the end of the lesson to deepen their understanding.

## **Critical Appraisal of Constructivist Approach & Classroom Implications**

The constructive approach to acquisition clarifies how acquisition takes place, whether the student uses his experiences to act on lecture or follows directions to prepare for something. In both cases, the theory indicates that the student shapes his knowledge based on his experiences. This means that every theory promotes receptive acquisition, meaning gaining knowledge through action.

There is a strong possibility in this approach that different students will perceive different acquisition environments differently. Combining logic and emotions in the acquisition process can lead to confusion. In this approach, solid acquisition opportunities are rare, so students often become discouraged.

The unpopularity of the constructive approach lies in the organization of the classroom. Students feel important when the teacher is passive. In the atmosphere of the school, students' opinions are more acceptable. Students have the freedom of choice and action, placing them at higher and lower levels.

### **Application in the Classroom**

1. The organizational style confirms the increase in individual understanding and intellectual activity. When some self-acquisition students obtain some results through research about the properties and methods of something and discuss these evidences socially, the validity of these results will be higher. That is, individual work is better for social verification.
2. In this theory, self-awareness and the solution of personal issues can be prioritized, and students perform their work, accept advice, and are determined to acquire knowledge.
3. The role of the teacher and student changes, and the student becomes directly involved in exploratory activities, while the teacher remains silent instead of teaching.
4. The role of the teacher becomes more than providing information, becoming an acquisition facilitator, a guide to information acquisition, and becoming co-acquisition with the student.

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## 9.7 Learning Outcomes

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After studying this Unit, you should have learned the following:

- Behaviorism is a unique type of approach founded by Watson.
- Behaviorism fundamentally discusses observable and measurable aspects of human behavior.
- Due to this school of thought, new ideas and innovations have emerged in the fields of acquisition and teaching, such as programmed learning and individual self-directed programs that include instructional machines and computer-assisted instruction.
- In classical conditioned acquisition theory, food is an unconditioned stimulus, while a bell is a neutral stimulus. Through experimentation, a neutral stimulus can create a conditioned response, as Pavlov demonstrated.
- If conditioned stimuli are presented repeatedly without reinforcement, the conditioned response, such as a dog's salivation, will gradually extinguish and eventually disappear.
- E.L. Thorndike was the first person to propose the theory of trial and error.
- E.L. Thorndike based his three laws on his experiments: the law of readiness, the law of exercise, and the law of effect.
- The practical theory of conditioned acquisition was introduced by B.F. Skinner.
- In this theory, reinforcement is provided for an action, and that action becomes conditioned by the reinforcement. Food acts as a stimulus, while the response to obtaining it is called reinforcement.
- In this process, the stimulus-response relationship is crucial, and repeated presentation of the stimulus reinforces the response. Reinforcement is significant in this theory.
- According to the cognitive school of thought, cognition includes awareness, emotions, attention, knowledge or information retention, memory, decision-making, and reasoning.
- According to Jean Piaget's theory of cognitive development, intelligence is a continuous process like a biological system.

- According to Jean Piaget, acquisition results from three types of actions: assimilation, accommodation, and equilibrium.
- Constructivist approach is based on the belief that acquisition is not something that is delivered to learners by a teacher but rather an active process in which learners construct knowledge by being actively engaged.
- Vygotsky's theory of acquisition introduces a special principle called the Zone of Proximal Development (ZPD), which is the area between actual abilities and potential abilities.
- According to Vygotsky, acquisition is social in nature, and a child learns through social interactions.
- Connectionism, or artificial intelligence, is a perspective in the fields of psychology, neuroscience, and philosophy of mind that presents the manifestation of mental or behavioral phenomena as emergent properties of interconnected networks of simple units.

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## 9.8 Glossary

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**Teaching:** Teaching is the broad application of skills and attributes that fulfills the educational needs of individuals and society.

**Learning:** Acquiring information, skills, knowledge, gaining awareness of various factors, is a relatively permanent change in behavior, which is a function of prior experience.

**Behavior:** The sum of all activities based on observable and non-observable acts.

**Reinforcement:** Strengthening an action or response through reinforcement.

**Motivation:** Any element found in the environment.

**Stimulus:** The expression of a natural response that is influenced by a stimulus.

**Response:** Mental schemas that are helpful in understanding.

**Schema:** An action in which new appearances and experiences are absorbed into existing mental schemas.

**Assimilation:** A situation where the individual does not absorb new appearances into mental schemas but rather expands their mental schema for new appearances and accepts them.



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## 9.9 Unit End Exercises

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### Objective Questions

1. What approach does Thorndike's theory of trial and error relate to? (a) Associative approach (b) Constructivist approach (c) Behavioral approach (d) None of the above
2. Which theory does the Law of Effect belong to? (a) Theory of Pavlovian Conditioning (b) Theory of Constructivism (c) Vygotsky's Theory (d) None of the above
3. In which approach are argumentation techniques emphasized? (a) Associative (b) Constructivism (c) Collaborative (d) Role-based
4. Which expert psychologist introduced the concept of programmed learning? (a) Jean Piaget (b) Skinner (c) Pavlov (d) Watson
5. Who is the zone of proximal development associated with? (a) Bruner (b) Jean Piaget (c) Vygotsky (d) None of the above

### Short Answer Questions

1. Teaching methodology refers to the broad application of skills and qualities that fulfill individual and societal educational needs.
2. Preparedness law refers to the state of readiness of an individual, where they are prepared to tackle a specific task or problem.
3. Spiral curriculum refers to the method of organizing topics in an educational program where major topics are given attention first, then revisited at different levels so that students' understanding continues to grow.
4. Pre-interactional levels refer to organizing students' educational experiences at different levels or grades so that they understand the importance of experiences.

### Long Answer Questions

1. Thorndike's acquisition laws include: (a) Law of Readiness, (b) Law of Effect, and (c) Law of Exercise. The Law of Readiness pertains to the state of preparedness of an individual, the Law of Effect involves the use of positive and negative reinforcement, and the Law of Exercise entails repeatedly reinforcing experiential actions.
2. Different teaching methodologies include: (a) Constructivist approach, (b) Role-based approach, (c) Constructivism, and (d) Collaborative approach.
3. Bruner's theories emphasize the spirituality of acquisition and teaching. In his theory, various methods are of fundamental importance to help students understand.

4. The strengths and weaknesses of the constructivist approach vary. The strengths include increased student engagement, deeper experiential learning, and enhanced critical thinking skills. The weaknesses include the subjective nature of student interest, incomplete details of experiences, and reduced understanding by students.

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## **9.10 Suggested Learning Resources**

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1. Psychological Foundation of Education: Marza Shaukat Beg, Muhammad Ibrahim Khalil, Syed Asghar Hussain Dukhan Traders.
2. Illuminating Aspects of Educational Psychology: Dr. Afaq Nadim Khan, Syed Muaz Hussain Education House Ali Garh.
3. Educational Psychology and Guidance: Malik Muhammad Musa, Saziya Rashid, Jadrin Publications.
4. Bright Aspects of Education: Dr. Ma'roof Maqbool, Dilpreet Publishing House.
5. Olson, Hergenhahn An Introduction to Theories of Learning PHI Learning Private Limited
6. Hussain Noushad Learning & Teaching A Constructivist Approach Shipra Publications
7. Dandapani, S. Advanced Educational Psychology, New Delhi, Anmol Publications Pvt. Ltd.

## **Unit 10: Approaches to Teaching at Tertiary Level Part-2**

### **Structure**

**10.0** Introduction

**10.1** Objectives

**10.2** Participatory Approach

**10.3** Cooperative Approach

**10.4** Personalized Approach

**10.5** Holistic Approach

**10.6** Critical Appraisal and Classroom Implications of the Above Approach

**10.7** Learning Outcomes

**10.8** Glossary

**10.9** Unit End Exercises

**10.10** Suggested Learning Resources

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### **10.0 Introduction**

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The purpose of teaching methodology is not only to provide students with information but also to foster relationships between teachers and students. A proficient teacher enhances students' minds by utilizing various teaching approaches, thereby enriching their personalities, intellect, emotions, values, and fundamental abilities. Before selecting teaching methodologies, an expert teacher determines the objectives of teaching a subject, how those objectives can be achieved with finesse, and how the subject matter can be presented effectively. Understanding different teaching approaches is essential to answer these questions.

In the previous unit, you studied various teaching approaches based on different schools of thought: behaviorism, constructivism, and connectivism, to teach at the tertiary level.

You know that the constructivist approach to teaching is based on constructivism, the preferred educational theory. The constructivist teaching approach ensures that teaching is most effective when the learner is actively engaged in the instructional process. According to this perspective, the learner constructs understanding and knowledge through active engagement in the learning process. Constructivist teaching fosters critical thinking and empowers the active and independent learner. This theory asserts that teaching always builds upon learners' prior

knowledge, referred to as schema. According to this theory, all new learning is filtered through existing schema. Therefore, proponents of constructivist theories suggest that teaching is most effective when learners are actively engaged in the instructional process, even though they acquire knowledge independently. In this type of teaching approach, the teacher engages students through questions and activities, guides them towards exploration and inquiry, provides explanations, elaborates on concepts, and assesses them. The best constructivist approach is one where all activities, including assessment, are student-driven, and the teacher facilitates learning and acquisition processes.

At the highest level of education, when students are mature and have extensive prior knowledge, the advantages of the constructivist teaching approach cannot be denied. Using participatory, cooperative, personalized, and holistic approaches to teaching at this level, students can be taught how to learn. Since these teaching approaches emphasize experiences and training, students become active participants in the instructional process, and the classroom environment becomes democratic. Teaching activities engage students' focus, promote interaction and dialogue between the teacher and students. Additionally, students have ample opportunity to express their thoughts, which enhances their communication skills. Students experiment and discuss their findings in the classroom. The skills learned in the classroom are applied in the real world, and the knowledge acquired from the outside world is built upon in the classroom. This usage strengthens group dynamics and instills a sense of responsibility in students, making them self-directed learners.

In this unit, you will study in detail about participatory approach, cooperative approach, personalized approach, and holistic approach at the highest level of education.

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## **10.1 Objective**

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After studying this Unit, you will be able to:

- explain the concept of participatory approach and its various methodologies
- utilize the participatory approach through interactive teaching methods in the classroom
- describe the advantages of the participatory approach
- list the components of cooperative teaching approach
- clarify the teaching system's procedure in cooperative approach

- explain the concept of personalized approach and its characteristics
- shed light on the objectives and fundamental components of personalized approach
- provide a phased explanation of teaching methods in personalized approach
- define the concept of holistic approach and its characteristics
- engage in a nuanced discussion about the components of holistic approach

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## **10.2 Participatory Approach**

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The participatory approach is based on the constructivist teaching methods of Piaget (1928) and Vygotsky (1978), which emphasize learning through the construction of knowledge rather than the transmission of knowledge. Brown et al. (1989) suggested that individuals learn more effectively when they use their knowledge to solve meaningful problems. Participatory approach is a reflective teaching method, sometimes also referred to as interactive teaching or student-centered teaching. It emphasizes the learners' subjectivity and self-construction of knowledge. It believes that learners are creators of information and understanding. This approach maintains that if guided correctly, learners can construct their own knowledge and learn. Participatory approach expects high levels of personal involvement and engagement from learners in the learning process. The benefit of this approach is that the learned knowledge becomes more consolidated and easier to retain. It represents contemporary teaching methods that emphasize learners' activities, exercises, experiences, and active learning methods. Thus, this approach is based on the fact that learners learn more when they attempt to do something, rather than being passive recipients of new information or simply reading or listening to it. Participatory approach prioritizes teaching methods that increase learners' involvement to enhance their learning.

The participatory approach engages students as active participants throughout the duration of classroom activities, assignments, projects, and examinations. The fundamental assumption of this approach is that students prepare assignments or projects, apply them, and then assess and grade their own assignments, projects, and educational activities. All educational activities in this approach are carried out individually or in groups. Students observe their peers' activities to learn from their strengths and weaknesses. The use of participatory approach is more suitable for graduate and professional schools along with adult education. Evaluation and self-assessment are important components of this approach. While keeping in mind the classroom

environment, a teacher can use any of the aforementioned participatory methods for teaching. For effective use of this approach, audio-visual aids, flip charts, projectors, overhead projectors, whiteboards, various educational films, models, and other teaching materials can be utilized. Students engage in teaching activities using various participatory methods such as group activities, peer teaching, brainstorming, case studies, role plays, management games, social surveys, cooperative games, collaborative discussions, practical experiences, etc. For example, here a brief explanation of peer teaching is being presented.

### **Reciprocal Teaching**

Reciprocal teaching is a teaching practice where dialogue between the teacher and the student aims to grasp the understanding of a text. It is a type of study technique that promotes students' comprehension skills. Essentially, it is one technique within the domain of reading. It was initially developed by Palincsar and Brown at Michigan University, USA, in 1986. According to them, the goal of reciprocal teaching is to facilitate the understanding of a text between the teacher and the students and among the students themselves.

### **Elements of Reciprocal Teaching:**

For successful reciprocal teaching in the classroom, it is crucial to consider five essential elements. These elements are as follows:

1. Summarizing or Explaining:
2. Questioning:
3. Clarifying:
4. PredICTing:

### **Mechanism of Reciprocal Teaching:**

Reciprocal teaching is highly effective under the supervision of the teacher and in collaborative exploration among small groups. The reciprocal approach provides training for students in four specific practices related to reading; summarizing, questioning, clarifying, and predICTing, which are supportive and helpful for dynamic and conscious comprehension. The procedure for its use is as follows:

- Students are divided into groups consisting of four students each.
- Each student is given a cue card with their role written on it, such as summarizer, questioner, clarifier, and predICTor. Each student is instructed to perform their role according to their cue card.
- All students in the group are given designated material to read.

- Students are instructed to underline key words, specific information, and complex phrases according to their roles.
- After completing the reading of the assigned material, the summarizer presents a summary of the content.
- The questioner asks questions based on precise words, complex phrases, unclear information, and prior knowledge
- The clarifier provides answers to the questions and explains complex phrases.
- The predICTor predICTs what information is forthcoming in the material or its subsequent parts.
- Once the reading of the assigned material is complete, roles are gradually rotated among students, and reading of the next part of the material is initiated.
- The teacher or facilitator merely acts as a facilitator and promotes the aforementioned four skills in students.

This reciprocal teaching method encourages active participation and engagement among students and fosters deeper comprehension of the text.

### **Features of Participatory Approach**

In the participatory approach to teaching, both the teacher and the students actively engage in the process of teaching and learning. Teaching activities are incomplete without the involvement of each other. During classroom teaching, the teacher performs various activities. They ask questions to students, write on the board, provide feedback, and assist students in their learning activities. Its characteristics are as follows:

- **Mutual Participation:** In participatory approach, there is a definite participation of both the teacher and the students. It is through their joint efforts that teaching and learning processes advance.

- **Purposeful, Effective, and Dynamic Teaching:** Teaching activities are purposeful, effective, and dynamic.

- **Students Attain Firm Knowledge:** Students acquire solid knowledge through participatory approach.

- **Transformation of Classroom Environment:** Its usage can transform the silent classroom environment into an active one.

- **Students Gain Realistic Understanding:** Students gain a realistic understanding of their own level of knowledge, aiding in the identification of educational objectives.

• **Content Becomes Accessible, Comprehensible, Perceivable, and Applicable:** The content becomes accessible, comprehensible, perceivable, and applicable.

• **Democratic, Collaborative, and Dynamic Classroom Environment:** The classroom environment becomes democratic, collaborative, and dynamic, fostering all-round development of students.

• **Increased Interest of Students, Teacher, and Curriculum in Teaching:** There is an increase in the interest of students, teachers, and curriculum in teaching.

### **Check Your Progress**

1. Describe the features of participatory approach.
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### **Characteristics of Cooperative Approach**

1. Student-Centeredness: Cooperative approach emphasizes the centrality of students in teaching and learning rather than focusing on the content and the teacher.
2. Self-Selection: In this approach, students are allowed to choose their own educational path, rather than being forced onto the teacher's path.
3. Supportive Environment: In cooperative approach, students collaborate with each other and utilize each other's skills.
4. Teacher as a Facilitator: The role of the teacher in cooperative learning is not just to provide information but to facilitate students in their learning process.
5. Mutual Assistance: In cooperative learning, students assist each other, value each other's perspectives, and monitor each other's work.
6. Focus on Group Success: Cooperative approach believes that the achievement and effectiveness of the group are more important than individual achievements and effectiveness.
7. Respect for Individuality: Cooperative approach aims to preserve the self-esteem of students and foster team spirit among them.
8. Opportunity for Collaboration: Cooperative approach believes that students should be given opportunities to work collaboratively in teaching and learning activities.
9. Preparation for Social Life: By working together cooperatively, students can be prepared for a supportive and responsible social life in the future.



## **Mechanism of Cooperative Approach in Teaching**

Generally, the following procedures are used in cooperative approach for teaching:

10. **Setting Group Objectives:** First, a significant unit of the curriculum is divided into meaningful sub-units or tasks, and all students in the class are divided into separate cooperative groups (usually consisting of 4 to 8 students). Now, these pre-divided sub-units are further divided among the cooperative groups for cooperative learning.
11. **Prepare Blueprint of the Whole Task:** Each group collaboratively plans how they will approach the assigned task, ensuring that each member understands their role and responsibilities.
12. **Formation of Cooperative Groups:** Students work together within their groups to understand, comprehend, apply, analyze, evaluate, and determine the significance of various concepts and information related to their assigned sub-unit.
13. **Give and Receive Explanation:** Students explain their findings to their group members and receive explanations from them, fostering mutual understanding and cooperation.
14. **Assigning Role to Each Group:** Each group member is assigned a specific role or responsibility within the group to ensure equal participation and contribution.
15. **Facilitating and Monitoring the Group:** The teacher facilitates and monitors the groups, providing guidance and support as needed to ensure effective collaboration and learning.
16. **Presentation of Findings in the Classroom:** Each group presents their findings to the whole class, sharing their learning and insights.
17. **Discussion, Analysis, Synthesis, Evaluation, and Improvement of Findings:** The class engages in discussions, analysis, synthesis, evaluation, and improvement of the presented findings, fostering critical thinking and collaborative problem-solving skills.
18. **Generalization:** Finally, the teacher guides the students in generalizing the learned concepts and skills to real-life situations or broader contexts.

## **Learning Teaching Methods**

To learn teaching methods, carefully study the following teaching procedures:

1. **Initial Cooperative Approach:** Initially, a specific unit of the curriculum is divided into meaningful sections or sub-units, and all students in the class are divided into individual groups (each group consisting of 4 to 8 students). Now, these pre-divided

sub-units are further distributed among the groups for cooperative learning. Students collaborate within their groups to gather information, comprehension, application, analysis, evaluation, and different types of meaningful concepts and information related to their assigned sub-unit. They acquire experiential learning, execute effective practices, and proceed towards achieving the learning objectives with the intention that students support and assist each other in their efforts. After a specified time, students from different groups gather together to discuss and comment on the learning experiences obtained from the assigned sub-units. This way, each group effectively introduces their acquired learning experiences to other groups, enhancing mutual understanding.

**2. Group Projects:** As the second teaching method of cooperative approach, students can be assigned to work on a group project. It is better to choose projects based on students' preferences. Working on such group projects fosters collaborative learning experiences and provides effective opportunities to engage in project-related activities within a shared environment. Any project undertaken by a group should be well-organized and planned so that it reflects higher-order thinking, analysis, and decision-making skills. Through these activities, students learn to collaborate effectively with their group members, gaining various experiential, demonstrative, and practical skills.

**3. Small Group Activities:** As the third teaching method of cooperative approach, students can be divided into small groups of 4 or 5, each group comprising students with different abilities. Each group is responsible for revisiting a specific lesson or unit taught by the teacher for re-observation, understanding, reflection, etc. The aim is to ensure that all students in the classroom reach the level of learning mastery in the specific lesson or unit. Efforts are made to achieve this objective by utilizing cooperative approaches. All students in each group collaborate with each other, with each student taking responsibility for a specific part or sub-unit of the lesson. This way, all students in the classroom who are responsible for teaching a specific part of the unit to their peers, ensuring mutual understanding and assistance. After a specified time, students from different groups gather together to introduce each other to their individual learning achievements. Such efforts are made to ensure that all students in the group reach the level of mastery in the desired acquisition. After these cooperative efforts, individual achievements of all students in the class can be assessed through group

checks, and based on the results, grading of their group can be done, followed by providing certificates, etc.

**4. Integrated Cooperative Approach:** As the fourth teaching method of cooperative approach, a unit related to a specific subject can be divided among 5 or 6 groups in the class, each group comprising students with different abilities. Each group is assigned the responsibility for teaching a specific part or sub-unit of the unit taught by the teacher. For the teaching of this sub-unit, one or more students in all other groups are assigned responsibility. In this way, all students in each group, who are responsible for teaching a specific sub-unit of the unit, work together with mutual cooperation, and each group presents its acquired learning experiences to the other groups through their unique teaching of acquired experiential knowledge. This way, after learning the same subject from the complete unit, students are again given the opportunity to work in their respective groups so that they can thoroughly study the entire unit through complete cooperation.

### **Check Your Progress**

1. What are the components of mutual educational accessibility method in writing.
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## **10.4 Personalized Approach**

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The credit for presenting personalized teaching approach goes to Professor Fred S. Keller. He, along with J.G. Sherman, developed this teaching approach in March 1963. Initially, it was implemented at Columbia University for teaching psychology. This approach is also referred to as the Keller Plan. Teaching through personalized approach is greatly influenced by the Programmed Instruction of Professor B.F. Skinner (1904-1990) at Harvard University. Keller and Sherman developed the Personalized Mastery Learning Program based on the principles of Programmed Instruction for high achieving students.

Personalized teaching approach, as the name suggests, is a method of teaching where teaching planning and implementation are done by keeping pure individualism in mind. In this approach, the role of students is central. All teaching and learning activities revolve around

students. Teaching planning and implementation are done according to the specific needs, interests, and abilities of individual students.

According to Green (1974), "The personalized teaching system is so named because teaching is done individually, face-to-face with each student, whether the number of students in the classroom is 100 or less."

In the words of Naper (1980), "The personalized teaching system fundamentally represents an independent learning process that moves forward at its own pace, in which all students work on designated units of the curriculum. Objectives are defined for each unit, and instructions for assignments and problem-solving are provided. When a student feels that he has mastered a unit, he must pass a brief test of that unit. To obtain permission to work on the next unit, the student must necessarily pass the unit test. Scoring of these unit tests is done immediately by the instructor or observer."

#### **Characteristics of Personalized Approach:**

- In personalized approach, individual students are taught to acquire knowledge individually, keeping in view their needs, interests, and abilities.
- Individual differences are noted, and all students are given the freedom to learn in their own ways and at their own pace.
- The subject matter is divided into relatively larger units in personalized approach, and appropriate instructions and resources are provided to each student to make use of them. Every student receives proper guidance and supervision to become well-trained and competent.
- All students are required to fully master the subject matter, but the performance of one student is not compared to another. When a student successfully completes a unit of study, he is tested on that unit, and only after succeeding is he allowed to work on the next unit. There is no need for a student to wait for another student to move on to the next unit.
- In personalized approach, students have full responsibility for acquiring knowledge and complete control over it. Every student is provided with the opportunity to learn according to his specific needs, interests, abilities, and pace. This is why personalized approach is used more in higher classes.

- The use of personalized approach can be made in general classes at the highest level of education. If the need for supervision is high, good students can be trained and entrusted with this responsibility.

The use of this approach gives students a sense of responsibility and maturity, and they become lifelong learners.

### **Objectives of Personalized Approach**

The objectives of personalized approach are as follows:

- Assist in establishing good individual and social relationships between teachers and students.
- Provide individual attention to all students, individually facing them.
- Assist all students in acquiring mastery of the same subject at their own pace.
- Provide immediate maximum reinforcement to students.
- Focus on making students the focal point of learning rather than the teacher.
- Teach students how to learn.
- Transform students into lifelong learners and instill a sense of responsibility in them.

### **Fundamental Elements of Personalized Approach**

The fundamental elements of personalized approach are as follows:

- **Presence of personal elements:** In personalized teaching, efforts are made to individualize acquisition as much as possible. Teaching under the personal approach lays the foundation for excellent individual and social relationships between students and teachers, and students engage in assigned academic activities.
- **Mastery learning:** Regardless of a student's performance level in the classroom, efforts are made to accelerate through mutual comparison between students. Each student is provided with opportunities for independent learning. Efforts are made for students to achieve mastery on each unit. After completing a unit, it is assessed, and only after being successful is the student assigned the next unit.
- **Self-pacing:** This approach provides all students with opportunities to acquire the same subject according to their needs, interests, abilities, and pace. After achieving mastery on one unit, students move on to the next unit at their own pace without having to wait for their classmates.
- **Emphasis on written work:** In personalized teaching, more emphasis is placed on written assignments than on traditional teaching methods. Whatever subject matter is

presented to students for learning is in written form. They are also provided with necessary instructions in written form, and the mastery of the subject matter is assessed in written form.

- **Reducing use of oral communication:** Efforts are made in personalized teaching to minimize the use of oral communication. Oral communication is only used when there is a strong need for instruction and stimulation. Additionally, various communicative means are utilized in this approach, providing students with the facility to use different types of information, scientific resources, and audiovisual aids, reducing dependence on oral communication.
- **Provision of appropriate reinforcement:** In the personalized approach system, efforts are made to provide maximum immediate reinforcement to all students in their acquisition. As soon as a student achieves mastery on a unit, immediate assessment is carried out through a proctor, and upon successful scoring, immediate feedback is provided, facilitating the student's progress to acquire skills in the next unit.
- **Use of Proctors:** The biggest advantage of the personalized approach system is individual attention. This makes it easier for teachers to supervise the acquisition process of students, provide timely required counseling and guidance, and prepare capable students by training them to perform the role of proctors upon achieving mastery on a subject. By doing so, complete success is achieved in the personalized approach system.
- **Reducing the problem of wastage and stagnation:** In the background of the personalized approach system, it is understood that through teaching, the performance and acquisition of all students can be brought to the level of mastery learning, regardless of how much time and energy an individual student has to invest. Thus, wastage of time, resources, and energy in traditional teaching systems can be minimized by using the personalized approach. The special feature of this approach is that there is no difference in the acquisition pace of other students due to the success or failure of one student. Consequently, other students are freed from unnecessary stagnation.
- **Role of the Teacher:** The personalized approach system demands a completely new role from the teacher compared to traditional teaching methods. Here, the teacher is

not merely a lecturer, informant, or provider of information; nor is their role that of a group teacher. Instead, the teacher is responsible for individually managing the acquisition process for all students, taking into account each student's individuality. The teacher provides all students with the necessary teaching acquisition situations, resources, and facilities to acquire skills independently at their own pace. Therefore, the teacher here must play the role of a successful organizer, leader, and facilitator and must support students individually and socially, guiding them to progress on their acquisition path in their own way. Thus, the role and responsibilities of the teacher in the personalized approach system are both extensive and extremely important.

In the system of personalized instruction, the following procedure is generally used for teaching:

**1. Division of Subject Matter into Units:**

- Initially, the topics of the specific subject matter provided in the curriculum are divided into appropriate units. Care is taken to ensure that these units are slightly larger in size than those defined by the program's instructional frame.

**2. Determination of Objectives Related to Unit Acquisition:**

- Objectives related to the acquisition of specific units are determined. These objectives are presented in clear written form in terms of changes in behavior. Assistance is provided to students in acquiring these objectives through instructional acquisition conditions, subject matter materials, acquisition aids and tools, study guide instructions, etc. Any scientific activities assigned to students are provided to them in written form along with materials and instructional guidelines.

**3. Guidance for Progression in Acquisition:**

- All students are provided with the text of a specific unit for study, followed by guidance on progressing in the acquisition process. Based on the guidance provided, students start the acquisition process according to their needs, interests, abilities, and pace. Students can carry out acquisition-related tasks in educational institutions, laboratories, workshops, libraries, or at home. Through their study and scientific activities, students become fully acquainted with the content of the

unit, skills, and their usefulness. If necessary, they can also seek guidance from their teacher or supervisor.

**4. Independent Progress in Acquisition:**

- All students proceed in the acquisition process at their own pace. The level of mastery in acquiring the material of the unit, which is defined jointly by the teacher and the student even before the start of the acquisition process, is the goal. When a student feels that they have acquired the mastery in the subject matter of the assigned unit and requests that their mastery be assessed, their proficiency is evaluated through a unit test. If successful, the student is allowed to proceed to the next unit for acquisition. If unsuccessful, the student is provided with feedback and guidance for further study to acquire mastery.

**5. Assistance from Supervisors:**

- Students who achieve mastery in all units of the complete curriculum are provided with special training to assist the teacher. It is the responsibility of these supervisors to assist their peers in reaching the level of acquisition mastery in the subject matter of the specific unit. Through the assistance of these supervisors, all students can be effectively guided individually for observation, guidance, timely assistance, unit testing, familiarization with success and failure, immediate feedback, maintaining interest and motivation in acquisition, etc. All tasks, the responsibility for which lies with the teacher, can be completed very effectively. Thus, the selection of supervisors and their training is the key to the success of the personalized instruction system.

**6. Final Assessment:**

- When a student completes the acquisition of all assigned units and achieves success in all unit tests, they are required to take a final examination. This examination determines the overall acquisition mastery of the subject matter from the complete curriculum. Based on this overall determination of proficiency, the student is graded.

**Check Your Progress:**

1. Describe the objectives of personalized instruction.



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## 10.5 Holistic Approach

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The holistic approach to education means connecting education with both the mind and the heart. It's a perspective focused on preparing students to tackle the challenges and issues they'll encounter in their lives and educational careers. Holistic approach encompasses philosophical inclinations and teaching methods. It's a comprehensive form of education that attempts to integrate all aspects of human life. This approach teaches young minds how to become better humans. It primarily focuses on learning fundamental knowledge, skills, and attitudes necessary to face all challenges in life, overcome obstacles, achieve success, and fulfill all that is required for a fulfilling future.

Comprehensive education is a movement that began in North America in the 1980s as a recognizable approach to studying and practicing education. Its development was in response to the predominant global theory of mainstream education, often referred to as mechanistic worldview. Instead of trying to provide a model for comprehensive education, it challenges reductionist assumptions of mainstream education and seeks to embrace cultural and educational diversity.

In essence, comprehensive education is rooted in fundamental global theories aimed at transforming the foundations of education. One of the proponents of this movement, Miller (1992), argued that "comprehensive education should not be articulated as a particular method or technique. It should be seen as an analogy, a set of fundamental assumptions and principles that can be applied in various ways." Martin and Forbes (2004) further emphasized that "what distinguishes comprehensive education at a general level is its focus on its purposes, attention to experiential modes of learning, and its emphasis on the importance of relationships and fundamental human values in the learning environment."

Comprehensive education aims to assess and cultivate qualities like human goodness, personal dignity, and the pursuit of happiness in both trials and successes. The pressures of competition, societal pressures, and violence, which often manifest physically, psychologically, and emotionally among school children, diminish their ability to learn. In today's world, children are forced to perform according to the directives of parents or teachers. They are not prepared to soar. Comprehensive education corrects this. It clarifies that children need not only educational advancement but also the ability to thrive in the modern world. The lack of coping skills and a

positive attitude has already posed a significant risk to children's flourishing in their lives. Undoubtedly, it's the responsibility of the current educational system to recognize children's strengths and weaknesses and prepare them accordingly. Comprehensive education teaches children about their immediate relationships with friends and family, as well as social, health, and intellectual development. This approach teaches children how they can become like the phoenix, rising from the ashes to spread their wings in the world. It encourages children to explore truths, realities, natural beauty, and the meaning of life.

### **Characteristics of Holistic Approach:**

The following are the characteristics of a holistic approach to education:

- It fosters the development of the whole person.
- It revolves around equal, democratic, and open relationships.
- Its connection lies not only in basic skills but in total life experiences.
- It acknowledges that cultures are created by people and can be changed by people.
- Its connection lies in the reverence for life and the multiplicity of aspects of life.
- It recognizes and nurtures every student's intellectual and creative abilities.
- It respects students' dignity and their creative emotions.
- Comprehensive teaching is fundamentally a democratic education, rooted in both individual freedom and social responsibility.
- It emphasizes the culture of peace, sustainable development, environmental literacy, human ethical values, and spiritual development.
- Spirituality is an important part of comprehensive education because it emphasizes harmony between all living beings and resonates with both internal and external life.
- As the theory of self-actualization in Maslow's theory suggests, comprehensive education believes that everyone should strive to achieve all those things mentioned by Maslow.

This approach respects individuality, believing that there is no deficiency in learners but only differences. This approach believes that everyone can reach the ultimate limit of development.

### **Components of Holistic Approach**

From the perspective of methodology, the holistic approach has mentioned the four pillars of education in the 21st century. UNESCO (2004) has also identified these four pillars with some minor differences. These four fundamental pillars are as follows:

1. Learning to Learn: Learning to learn begins with learning to ask questions, seeking further knowledge, and obtaining more information. Asking questions is a natural instinct in the pursuit of knowledge. The main purpose of questioning is to gain more insight than just finding answers. It helps in promoting qualities like concentration, listening, understanding, curiosity, conscience, and creative abilities. Learning to learn means taking responsibility for one's own learning, keeping oneself up-to-date with scientific credibility, and being engaged in the search for knowledge. It means developing a scientific awareness or scientific temperament within oneself.
2. Learning to Do: Learning to do means becoming skilled and productive. In the modern system, it means learning to change society through logical, intellectual, and responsible action. It means learning to adapt oneself according to the nature of work and teamwork. Along with this, it involves the use of wisdom in solving problems and making rational decisions for standard products and manufacturing services. Moreover, it also includes taking risks when necessary.
3. Learning to Live Together: It means learning to live with responsibility, respect, and cooperation with other people and generally living with all living beings on the planet Earth. It means accepting the individuality of every person. The aim of education is freedom from concepts such as nerves, hostility, exclusivity, authority, and dogmatism, which lead to differences, conflicts, and wars. The fundamental principle of this pillar of learning is the knowledge of interdependence and social ties. The meaning of this pillar is education that chooses the path of harmony and achieves common goals in life. It emphasizes the understanding of excellent qualities such as self-understanding, understanding of others, positive acceptance of human diversity, and demonstration of the similarity and mutual dependence of all human beings. It promotes social behaviors based on sharing, empathy, respect for other religions, destinies, and cultures, and the ability to work for common goals. Furthermore, it enhances the ability to resolve conflicts through dialogue.
4. Learning to Be: Learning to be means embarking on a journey to discover the essence of one's being, which transcends beliefs and actions. It leads to the discovery of human qualities rather than individual qualities. Holistic education acknowledges the human being fundamentally as a spiritual entity by accepting the meaning of education in a particular way. Therefore, "learning to be" can be interpreted as

learning to become a compatible human being for intellectual, ethical, cultural, and physical development through the acquisition of knowledge, skills, and values. It means a curriculum aimed at the demonstration of imaginative and creative abilities, the acquisition of global human qualities, and the enhancement of memory, reasoning, aesthetic sense, physical abilities, communication, and social skills. Furthermore, it helps in promoting critical thinking, making independent decisions, determination, and responsibility.

### **Check Your Progress**

1. Explain the advantages of holistic education.
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## **10.6 Participatory Approach in Classroom and Critical Evaluation**

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The purpose of teaching methodology is not only to provide students with information but also to foster relationships between teachers and students. A skilled teacher, by employing various teaching methodologies, enhances not only students' intellect but also their complete personality, intelligence, emotions, values, and basic talents. Before selecting a teaching methodology, an expert teacher determines the objectives of teaching a subject. How can these objectives be achieved with a pleasant approach? How can the subject matter be presented effectively? Understanding the appropriate answers to these questions is necessary to be knowledgeable about different teaching methodologies.

When education reaches its highest level and students have become mature and knowledgeable, constructivist teaching methodologies cannot be denied. Using participatory teaching methodologies, cooperative teaching methodologies, personalized teaching methodologies, and holistic teaching methodologies can teach advanced students how to learn. Since these teaching methodologies emphasize experiences and training, students become active participants in teaching activities, and the classroom environment becomes democratic. Teaching activities keep students focused, and there is an environment of interaction and dialogue between the teacher and the students. Additionally, students get ample opportunities to express themselves, which enhances their communication skills. Students experiment with ideas and discuss them in the classroom. In these methodologies, students research on a project and present

their findings in the classroom. They apply the skills learned in the classroom to the outside world and build on the knowledge gained from the outside world in the classroom. Using these methodologies strengthens group work, and students develop a sense of responsibility, becoming self-directed learners.

You have extensively studied Participatory Approach, Cooperative Approach, Personalized Approach, and Holistic Approach. The use of these methodologies in the classroom should be done considering the nature of the subject matter, the size of the classroom, students' prior knowledge, the availability of teaching materials, and the schedule.

#### **Participatory Approach in Classroom and Critical Evaluation:**

Participatory teaching is based on the fact that if students try to do something, they will learn more, rather than just being silent and reading or listening to new information. The use of participatory teaching is more suitable for graduate and professional schools along with schools for adults. For the effective use of this approach, auditory-visual aids, flip charts, projectors, overhead projectors, whiteboards, various educational films, models, and other teaching materials are required. Therefore, if auxiliary materials are available, teaching activities can be conducted using various participatory methods such as group activities, teaching exchanges, brainstorming, case studies, role-playing, management games, social surveys, cooperative games, collaborative discussions, presentation of experiments, etc., or their integration. Additionally, this approach can be used to teach students study skills.

#### **Cooperative Approach in Classroom and Critical Evaluation:**

Cooperative education is an educational approach that aims to organize classroom activities into educational and social teaching experiences. In cooperative education, students try to learn from each other's mutual sharing, use each other's resources and skills, obtain information from each other, value each other's ideas, and supervise each other's work. Students in a group work together to understand, interpret, apply, analyze, evaluate, and determine the relevance of the subject matter related to their subunits. Cooperative teaching methodologies can be used to gather various types of meaningful, concepts, and information, acquire experiential experiences, conduct beneficial experiences and actions, and perform on projects.

#### **Personalized Approach in Classroom and Critical Evaluation:**

As the name suggests, personalized teaching methodology is a teaching method in which teaching planning and implementation are done by keeping pure individual theory in mind. In this methodology, the role of the student is central. All teaching and acquisition activities are

focused on the student. The teaching system of personalized teaching mainly represents a free acquisition that progresses ahead at its own pace. Individual differences are noted, and all students work on the units designed specifically for them. It allows freedom (psychologically), good decision-making (self-governance), post-acquisition (learning in one's own way), social ability (learning social skills), character improvement (character demonstration), and self-awareness (emotional development) in education. It can be used in adult education, distance education, professional, and higher education. Such students who are self-motivated to learn can use this approach for transversal acquisition.

### **Holistic Approach in Classroom and Critical Evaluation:**

The holistic approach focuses on preparing students to face future challenges and challenges in their lives and educational careers. It attempts to include all human life experiences. This approach fundamentally represents the learning of all information, skills, and attitudes related to understanding, confronting all challenges of life, controlling obstacles, achieving success, and fulfilling all the things required for future life. Freedom (psychological), good decision-making (self-governance), post-acquisition (learning in one's own way), social capability (learning social skills), character improvement (character demonstration), and self-awareness (emotional development) are provided for in education. The holistic approach has mentioned the four pillars of education in the 21st century: learning to learn, learning to do, learning to live together, and learning to be. It means education from such a curriculum, whose purpose is to demonstrate imaginative and creative abilities, the acquisition of global human qualities, and the enhancement of memory, reasoning, aesthetic sense, physical abilities, communication, and social skills. Its use can be done at all levels of education. Especially, the use of this approach at the highest level of education can promote leadership qualities in students.

### **Check Your Progress**

1. Present a critical evaluation of the Participatory Approach.
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## **10.7 Learning Outcomes**

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### **Acquired Learning Outcomes:**

After studying this Unit, you should have learned the following:

- The purpose of teaching is not only to provide students with information but also to bring energy into the relationship between teachers and students.
- Constructivist teaching ensures that learning occurs when the learner actively engages in the learning process.
- Collaborative learning engages students as active participants throughout the entire duration of classroom activities, assignments, projects, and exams.
- Collaborative teaching methods such as reciprocal teaching, brainstorming, case studies, role play, management games, social surveys, cooperative games, collaborative discussions, presentations, etc., are important approaches.
- Reciprocal teaching is a study technique pioneered by Palincsar and Brown at Michigan University in the USA in 1986.
- Reciprocal teaching trains students in four specific strategies related to study: summarizing, questioning, clarifying, and predICTing.
- Reciprocal teaching and Smith mutual teaching define understanding and insight as desirable, inventive, extensive, and high-level thinking.
- Positive interdependence, individual and collective responsibilities, interactive improvement, training in interpersonal skills, and group action are important components of mutual interaction.
- Personalized instruction individualizes learning for a specific learner, taking into account their needs, interests, and abilities.
- Personal elements such as presence, transformative acquisition, personal behavior, emphasis on written action, minimizing verbal correspondence, appropriate reinforcement, and use of humor are important components of personalized instruction.
- Comprehensive instruction attempts to include all experiences of human life. It teaches the young mind how to become human.
- Comprehensive instruction primarily explains the basic knowledge, skills, and attitudes required to meet all the challenges of life, cope with obstacles, achieve success, and fulfill all the requirements necessary for future life.
- Comprehensive instruction teaches students how they can become like phoenixes, rising from the ashes to spread their wings in the world. This approach encourages students to observe truths, realities, natural beauty, and the meaning of life.

- Comprehensive instruction is related to the inner life of students, their emotions, desires, thoughts, and questions; all of which they use in the process of learning.
- Comprehensive instruction expresses an environmental awareness. It acknowledges that everything in the world is interconnected.
- Comprehensive instruction recognizes the innate intelligence and creative thinking of every student. It respects the dignity of students and their creative emotions.
- Teaching comprehensive instruction is fundamentally a democratic education that relates to both individual freedom and social responsibility. It emphasizes the culture of peace, sustainable development, environmental literacy, human ethical values, and spiritual advancement.
- Comprehensive instruction believes in the individuality of the individual, according to which there is no deficiency in learners, only differences, and everyone can reach the ultimate limit of development.
- Learning to learn, learning to do, learning to live together, and learning to be are fundamental aspects of comprehensive instruction.

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## 10.8 Glossary

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**Mutual Relations:** Interactions or relationships between individuals or institutions.

**Energy:** The ability or power to work, utilize force, or exert power.

**Intelligence:** The ability to acquire knowledge, understand concepts, and apply them in different situations.

**Emotions:** Psychological and physical reactions or feelings that arise in response to stimuli or experiences.

**Values:** Principles that help you decide what is right and wrong and how to act in different situations.

**Wisdom:** Deep understanding and knowledge obtained through experience, good judgment, and the effective application of knowledge.

**Complex:** Complicated or consisting of multiple interconnected parts.

**Symbols:** Visual representations that convey meaning or represent thoughts, concepts, or objects.

**Facilitator:** An instructor who assists in learning by providing guidance, assistance, or resources to facilitate the learning process or engages students.



**Learning Theory:** The study of principles that explain how learning occurs.

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## 10.9 Unit End Exercises

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### Objective Questions

1. People learn more when they use their knowledge to solve meaningful problems." Whose quote is this?
  - (a) Brown
  - (b) Piaget
  - (c) Vygotsky
  - (d) Dewey
2. What are the important components of observation and evaluation?
  - (a) Collaborative
  - (b) Mutual
  - (c) Personalized
  - (d) Comprehensive
3. Who introduced the concept of reciprocal teaching?
  - (a) Woodruff
  - (b) Skinner
  - (c) Brown and Palincsar
  - (d) Gates and others
4. Where was the first use of reciprocal teaching in a university?
  - (a) Michigan
  - (b) Oxford
  - (c) Cambridge
  - (d) Stanford
5. "The promotion of students' knowledge and social skills should be utilized in external life and democratic society." Whose quote is this?
  - (a) Vygotsky
  - (b) Skinner
  - (c) John Dewey
  - (d) Gates and others

6. Who is credited with presenting personalized teaching methodology?
- (a) Keller and Sherman
  - (b) Alport and Mead
  - (c) Dewey and Piaget
  - (d) Skinner and Bruner

### **Short Answer Questions**

1. Explain the concept of collaborative learning. How would you implement this approach in the classroom? Provide examples.
2. What skills are nurtured through reciprocal teaching in collaborative learning? Explain.
3. List the components of collaborative instructional approach.
4. Explain the concept of personalized instruction and its characteristics.
5. List the objectives of personalized instruction.
6. Explain the phased approach to teaching in personalized instruction.
7. Explain the concept and characteristics of comprehensive instruction.
8. What does it mean to learn to learn? Explain.

### **Long Answer Questions**

1. Explain the concept of collaborative learning. How would you implement reciprocal teaching in the classroom? Provide examples.
2. How would you utilize reciprocal teaching in collaborative learning? Explain.
3. Explain the concept of reciprocal teaching and its application approach.
4. What do you understand by collaborative instructional approach? Shed light on its components.
5. Clarify the concept of personalized instruction and discuss its characteristics.
6. Elaborate on the objectives and fundamental components of personalized instruction.
7. How would you implement personalized instruction in higher classes? Provide examples.
8. Explain the phased approach to teaching in personalized instruction.
9. Describe the concept, objectives, and characteristics of comprehensive instruction.
10. Illuminate the importance of the four fundamental components of comprehensive instruction in the present era.

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## 10.10 Suggested Learning Resources

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## **Unit 11: Methods of Teaching at Tertiary Level**

### **Structure**

**11.0** Introduction

**11.1** Objectives

**11.2** Andragogy Vs Pedagogy

**11.3** Understanding Approach, Method, and Technique

**11.4** Methods of Teaching at Tertiary Level

**11.4.1** Lecture Method

**11.4.2** Demonstration Method

**11.4.3** Discussion Method

**11.4.4** Collaboration Method

**11.5** Methods of Teaching at Tertiary Level

**11.5.1** Problem Solving Method

**11.5.2** Project and Activity Based Method

**11.5.3** Heuristic Method (Exploratory Method)

**11.6** Critical Appraisal and Classroom Implications of Above Approaches

**11.7** Learning Outcomes

**11.8** Glossary

**11.9** Unit End Exercises

**11.10** Suggested Learning Resources

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### **11.0 Introduction**

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In this Unit, students will understand the approaches to teaching along with the teaching methods and techniques. It is essential for students to comprehend the concept of approach, which is crucial for the teaching and learning process. Due to the various teaching methods for different subjects, it becomes necessary to know what these different teaching methods are. This Unit clarifies that. Students will also understand the techniques through this Unit. They will learn that after selecting the curriculum for teaching any subject, it needs to be organized. The most significant issue for students today is to be well-acquainted with the approach used by the teacher because teachers use different approaches and teaching methods to improve their teaching. Through this Unit, students will understand the merits and demerits of the lecture method, demonstration method, discussion method, collaboration method, problem-solving

method, and project and activity-based methods. This Unit also sheds light on the critical appraisal and classroom implications of the aforementioned teaching methods.

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## 11.1 Objectives

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After studying this Unit, you will be able to:

- differentiate between andragogy and pedagogy
- clarify the concepts of andragogy and pedagogy
- explain the approach or mode of access, teaching method, and technique
- describe the meaning and importance of the lecture and demonstration methods in teaching
- explain the concept of the discussion teaching method and related information
- illuminate the collaboration and problem-solving teaching methods
- describe the concept and meaning of the project and activity-based method

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## 11.2 Andragogy Vs Pedagogy

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### **Andragogy**

Andragogy refers to the methods or techniques used to teach adults. This term was introduced as a new word by German educator Alexander Knapp in 1735. He used this term to describe the educational standards employed by the great philosopher Plato. In the 1970s, Malcolm Knowles focused on adult education, which led to the popularity of this term. According to Knowles, adult education is a vast area of educational research and one of the most complex issues. Adults learn differently and have different learning strategies. Malcolm Knowles defined andragogy as the art and science of helping adults learn. The basic assumptions of andragogy are as follows:

- **Need to Know:** The first assumption is that adults need to understand the usefulness and value of the content they are learning before they start learning it. When adults think about learning something, they spend considerable energy investigating the benefits they will gain from the learning and the negative consequences of not learning it.
- **Self-Concept:** As individuals mature, their personality develops towards becoming a self-directed human being.

- **Experience:** As individuals mature and become adults, they accumulate a wealth of experiences that help in learning.
- **Readiness to Learn:** With maturity, an individual's readiness to learn increases, focusing on developmental tasks related to their social roles.
- **Orientation to Learning:** With maturity, there is a shift in perspective, and the individual's learning orientation changes from subject-centeredness to problem-centeredness.
- **Motivation to Learn:** With maturity, the individual's motivation to learn becomes more internal.

### **Pedagogy**

The term pedagogy is much older than andragogy. The roots of the word pedagogy are connected to Latin and Greek words, meaning to guide or teach children. The term pedagogy is derived from the Greek word "Paid," which means child, and "agogous," which means leader. Therefore, the literal meaning is the leader of children, i.e., the art and science of teaching children.

The pedagogical model assigns full responsibility to the teacher regarding what subject will be taught, how it will be taught, and whether the concept has been learned by the student. The basic assumptions of pedagogy are as follows:

- **Learning Content:** Learners only need to know what the instructor teaches. The primary purpose of learning content is to pass the course. Learners do not need to understand how what they are learning applies to their lives outside the classroom.
- **Dependent Learner:** The instructor perceives the learner as a dependent entity. Thus, the learner begins to view themselves as a dependent entity.
- **Prior Knowledge:** The learner's prior knowledge is minimally effective as a learning resource. The essential elements of the learning process are the teacher, textbook, and supplementary educational materials. Learners are ready to learn what the instructor tells them they need to learn to complete the course successfully.
- **Subject-Organized Content:** Instructors organize information by subject. It is necessary for teachers to organize content in a logical manner.
- **External Motivation:** Learners are motivated by external factors (such as approval from parents or instructors, good grades).

<b>Role of Learner's Experiences</b>	<ul style="list-style-type: none"> <li>• Learner comes into the activity with very little experience.</li> <li>• The instructor's experience is the most influential.</li> </ul>	<ul style="list-style-type: none"> <li>• Learner brings a significant amount and quality of experience.</li> <li>• Adults provide a rich resource.</li> <li>• Diverse experiences ensure diversity in adult groups.</li> <li>• Experience becomes a means of self-identification.</li> </ul>
<b>Readiness to Learn</b>	<ul style="list-style-type: none"> <li>• Students are told what they need to learn to advance to the next level of proficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• Any change triggers readiness to learn.</li> <li>• Need to know how to perform more effectively in some aspect of life.</li> <li>• Ability to perceive the gap between where they are and where they want to be.</li> </ul>
<b>Orientation to Learning</b>	<ul style="list-style-type: none"> <li>• Learning is the process of acquiring predetermined subject matter.</li> <li>• Content units are organized logically according to the subject.</li> </ul>	<ul style="list-style-type: none"> <li>• Learners want to perform tasks, solve problems, and live more satisfying lives.</li> <li>• Learning should be relevant to real-life tasks.</li> <li>• Learning is organized around life/work situations rather than subject units.</li> </ul>
<b>Motivation to Learn</b>	<ul style="list-style-type: none"> <li>• Primarily driven by external pressures, competition for grades, and consequences of failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Internal motivators: self-confidence, recognition, better quality of life, realism.</li> </ul>
<b>Learner</b>	<b>Pedagogical</b> <ul style="list-style-type: none"> <li>• Learner depends on the instructor for all learning.</li> </ul>	<b>Andragogical</b> <ul style="list-style-type: none"> <li>• Learner is self-directed.</li> <li>• Learner is responsible for</li> </ul>

	<ul style="list-style-type: none"> <li>• The teacher/instructor takes full responsibility for what is taught and how it is taught.</li> <li>• The teacher evaluates or assesses the learning.</li> </ul>	<p>their own learning.</p> <ul style="list-style-type: none"> <li>• Self-concept is a characteristic of this approach.</li> </ul>
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### Check Your Progress

1. Explain the basic assumptions of Andragogy.
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## 11.3 Understanding Approach, Method, and Technique

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### Approach

In the proper framework of teaching methods, an approach is formed by the theoretical principles on which curriculum design is based. Thus, an approach is generally understood as part of linguistic, psychological, and pedagogical theories that influence the teaching process. To understand an approach, it's necessary to look at it specifically. For instance, consider the integrative approach, where subjects like history, civics, and economics are interconnected and presented systematically under social sciences. This makes it more effective and meaningful, as the knowledge of all subjects is incomplete without each other. This approach also includes cognitive and constructivist perspectives.

### Understanding Teaching Methods

The importance of understanding teaching methods is crucial for successful teaching and achieving educational objectives. Kochar has stated that just as a soldier needs knowledge of weapons to fight, a teacher needs knowledge of various teaching methods. Whether the teaching method is strong or weak, it establishes a mutual relationship through interaction between the teacher and the student. It depends on the teacher to decide which teaching method to use to achieve success in teaching and meet the defined objectives. Teaching methods refer to the activities performed by a teacher, which result in students learning something. A teacher needs to have mastery over the subject matter and an understanding of which teaching method can be used where.

### Understanding Technique



Teaching techniques are ways to implement a plan to assist learners in achieving educational objectives. It assesses teaching in terms of goal-oriented teaching practices aimed at achieving limited instructional goals. Teaching techniques are used in specific situations and depend on several elements, including objectives, teaching methods, students' abilities, the teacher's personality, and experience. Understanding teaching techniques is essential for a teacher, and their importance includes the following points:

- One of the most important needs for teaching techniques is that they help capture students' attention in the classroom.
- Proper use of teaching techniques generates interest in the subject among students and encourages further learning.
- Teaching techniques stimulate students' minds for learning.
- They help students understand the subject matter rather than just memorize it.
- They are necessary as a means of generating or maintaining interest among students.

Some important techniques are primarily used for language teaching, where narration is a key technique for conveying knowledge. Narration is an art where teachers present their lesson in the form of a story to make teaching more interesting. Similarly, description is also a technique like narration. Description involves explaining events, people, or incidents in words, aiming to create a mental picture or image in students' minds. Explanation is another technique that involves the art of talking to clearly understand a concept, theory, idea, or process. Similarly, questioning is one of the most important techniques of teaching. It is the most effective means of communication between the teacher and the learner.

### **Check Your Progress**

1. Why is understanding teaching methods necessary? Explain.
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## **11.4 Methods of Teaching at Tertiary Level**

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Classroom teaching at the tertiary level is distinct due to larger and more diverse groups, posing challenges for teachers. The learning process occurs in formal or artificial environments, where maintaining students' attention and interest can be challenging. To address this, teachers employ various teaching methods during their lectures. Tertiary education, also known as post-

secondary education, follows secondary education. At this level, teachers should be knowledgeable about different teaching methods and understand which method is appropriate for a particular subject. Some of these methods are discussed below.

### **11.4.1 Lecture Method**

The lecture method involves a formal presentation where the teacher explains the subject matter in simple and clear language. In this method, the teacher conveys essential information to students through speech and explanations. This method is widely used at the tertiary level. The lecture method includes the following stages:

#### **1. Introduction:**

- Initially, it is psychologically assumed that students are ready to learn. The teacher establishes a connection with the students and prepares them for learning. The lesson begins with an introduction based on students' prior knowledge.

#### **2. Development or Presentation Stage:**

- The teacher must prepare the subject matter in a way that it can be effectively presented to the students. The teacher explains concepts and frequently asks questions to maintain students' interest. During the lecture, the teacher employs various strategies to achieve the specific objectives related to the topic.

#### **3. Consolidation Stage:**

- After the presentation, the teacher reviews the material to assess how well the teaching objectives were met and identifies any learning difficulties the students may have. This allows the teacher to adjust their teaching methods accordingly.

### **Characteristics of the Lecture Method**

The lecture method has several characteristics:

- **Time Efficiency:**

- The teacher can cover a large amount of educational material in a short period.

- **Repetition:**

- Ambiguous educational material can be repeated for better understanding.

- **Cost-Effective:**

- This method is very economical.

- **Teacher's Influence:**

- The teacher's personality significantly impacts the effectiveness of this method.
- **Listening Skills:**
  - It helps develop listening skills in students.

### **Demerits of the Lecture Method**

Despite its advantages, the lecture method has some drawbacks:

- **Lack of Student Engagement:**
  - This method emphasizes presentation over student activity and does not always consider the learning process.
- **Limited to Higher Levels:**
  - It is primarily suitable for higher education levels.
- **Teacher-Centered:**
  - This method is teacher-centered, which may not always cater to individual student needs.

### **Check Your Progress**

1. Why is understanding teaching methods necessary? Explain.
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### **11.4.2 Demonstration Method**

The term "demonstration" means to show or perform an activity. In this method, the teaching process is carried out systematically. This means that the teacher uses a structured, step-by-step process to demonstrate a concept to their students. The demonstration method is a practical teaching approach where the teacher performs an activity to teach the material. It is often used when students are unable to understand or apply a concept through theoretical explanations alone. This method focuses on achieving psychomotor and cognitive objectives. The demonstration method involves the following steps:

1. **Proper Planning:** Effective demonstrations require the teacher to plan the lesson in advance.
2. **Provision of Necessary Items:** Ensure that all necessary items for the demonstration are arranged in an orderly manner.

3. **Stating the Objectives:** Clearly explain the objectives of the lesson to generate interest among students.
4. **Explanation of the Demonstration Subject:** Clarify any new terms and different parts of the demonstration.
5. **Using Visual Aids:** Whenever possible, complement the demonstration with visual aids.
6. **Visibility:** The demonstration should be conducted in a place where all students can see it clearly.
7. **Clear and Simple Language:** The demonstrator should use clear and simple language to make the concept easily understandable for students.
8. **Opportunity for Questions:** Allow students to ask questions and discuss their understanding to clarify any doubts.
9. **Connecting Prior Knowledge:** Link the demonstration to previous and future lessons.
10. **Sequential Presentation:** Perform all tasks in a skillful and sequential manner.
11. **Student Assistance:** Involve students in the demonstration whenever possible.
12. **Summary of Key Points:** Summarize the key points of the demonstration in front of the students.
13. **Review:** After the demonstration, ask questions to assess the students' understanding and performance. The teacher evaluates the outcomes of the demonstration at this stage.

### **Merits of the Demonstration Method**

The demonstration method has several advantages:

- **Clarity:** It helps students understand the topic easily.
- **Engagement:** Keeps students active and aids in the teaching and learning process.
- **Curiosity:** Fosters a sense of discovery among students.
- **Focus:** Concentrates students' attention and provides maximum information.

### **Demerits of the Demonstration Method**

However, it also has some drawbacks:

- **Limited Student Participation:** The teacher performs the demonstration while students are not actively involved, limiting their direct benefit.

- **Costly:** Requires expensive equipment and materials.
- **Time-Consuming:** This method takes more time to execute.

### 11.4.3 Discussion Method

The word "discuss" is derived from the Latin word "discutere," meaning to shake or examine thoroughly. The discussion method is also known as the Socratic method, named after the ancient Greek philosopher Socrates, who engaged students in discussions. A key feature of this method is that students are actively involved in building information, understanding, or interpretation. This method involves two-way communication where both the teacher and students participate in the discussion, making it a group activity. The teacher and students work together to clarify and solve problems. The discussion method is described as a constructive process that includes listening, thinking, and speaking skills.

#### Phases of the Discussion Method

Adopting the discussion method involves significant planning by both the teacher and students. There are three phases in this process:

##### 1. Preparation:

- Planning is essential for any method to succeed. Before using the discussion method in the classroom, the topic should be selected, an outline prepared, and a strategy devised. Logical and organized ideas should be developed, and the classroom environment should be conducive to open discussion. Seating arrangements should be made to facilitate interaction.

#### Components of Discussion

There are five key components of a discussion: leader, group, problem, materials, and assessment.

1. **Leader:** The teacher acts as the leader in the classroom. They should be well-prepared to guide the discussion.
2. **Group:** The discussion involves a group of students with diverse interests, temperaments, and ideas. The teacher should encourage every student to participate.
3. **Problem:** The topic of discussion should be relevant and relatable for the students, considering their age, intelligence, and context.
4. **Materials:** Resources such as books, magazines, newspapers, pICTures, maps, and other materials are used during the discussion.

5. **Assessment:** The main aim of assessing a discussion is to bring about the desired changes in students. If the discussion does not lead to any change, it is considered ineffective.

### **Conducting the Discussion**

During the discussion, all five components are included. The discussion begins in a manner that allows all participants to express their thoughts freely, comfortably, and successfully. The leader should keep the predefined objectives in mind and use questions to achieve them. They can present specific facts, share experiences, and summarize the discussion. The process focuses on four points: initiation, experience, clarification, and summary.

### **Evaluation of the Discussion**

Finally, the discussion is evaluated to determine its success or failure. Students should assess the extent to which the discussion has enhanced their knowledge, changed their attitudes, and achieved the objectives.

### **Merits of Discussion Method**

The merits of the discussion method are as follows:

- **Stimulates the process of thinking:** This teaching method encourages critical and creative thinking among students.
- **Facilitates the gathering of diverse knowledge, opinions, and feelings:** Through discussions, different perspectives and opinions come to light, enriching students' understanding.
- **Aids in correcting facts and promoting acquisition:** This method helps students dispel misconceptions and obtain accurate information.
- **Facilitates collaborative learning, responsibilities, and sharing of interests:** Discussion fosters collaborative learning where students share responsibilities and interests.

### **Demerits of Discussion Method**

The demerits of the discussion method are as follows:

- **Requires more time:** This method consumes more time compared to other teaching methods.
- **Involves efforts from both teachers and students:** Both teachers and students need to actively participate, which can be demanding.
- **May include unnecessary arguments:** Discussions may sometimes lead to unnecessary arguments.

- **Can evoke emotional tensions and unpleasant feelings:** This teaching method can sometimes lead to emotional tensions and unpleasant feelings among participants.

#### 11.4.4 Collaboration Method

The collaboration method involves working in small groups under the guidance of both students and teachers to achieve common learning objectives. Teachers have the opportunity to assess students' basic abilities and work on their communication and teamwork skills, which are valuable for success in life. The following points are included in this teaching method:

- **Personal mutual dependence:** Generally, positive mutual dependence is discussed when it benefits everyone. Each member of the group works as a team to achieve common goals.
- **Individual accountability:** In this teaching method, students work together as a team for creativity and acquisition, but ultimately, each individual student is responsible for their performance.
- **Equal participation:** Equal participation in collaboration means that group work is generally welcomed by students, but it is essential to ensure that all students are contributing equally.
- **Simultaneous interaction:** This teaching method works to promote simultaneous interaction to enhance collaborative learning.

#### Merits of Collaboration Method

The merits of the collaboration method are as follows:

- **Enhances critical thinking:** Group work during collaboration allows students to express their opinions or thoughts with other students, leading to critical analysis and interpretation.
- **Improves problem-solving skills:** Learning through mutual collaboration requires all groups to work together to solve a problem, enhancing students' problem-solving skills.
- **Peer Learning:** Students learn from their peer colleagues during group work.

#### Demerits of Collaboration Method

The demerits of the collaboration method are as follows:

- **Principle of different speeds:** Individuals have a preference for learning at different speeds, which can make group work time-consuming.

- **Possibility of a group leader:** In some groups, there may be a person or student who becomes the leader, which can cause imbalance within the group.
- **Struggle for groups lacking teamwork skills:** If a group lacks teamwork skills, they may face challenges during group work.

### **Check Your Progress**

1. Describe the characteristics of the lecture teaching method.
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## **11.5 Methods of Teaching at Tertiary Level**

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Numerous teaching methods have been mentioned above, which are based on general principles, pedagogical insights, and administrative practical wisdom that are used for teaching in the classroom. In addition to these, there are some other teaching methods being discussed here.

### **11.5.1 Problem Solving Method**

The problem-solving method is a teaching method where a problem is introduced or initiated for teaching. It is a method in which students are presented with a challenging problem and are provided with guidance to solve it. The problem-solving method involves investigating an event, acquiring new knowledge, and ensuring the correctness of knowledge. Specific principles of reasoning are used to gather empirical and measurable evidence for solving the problem. The problem-solving method is a systematic and organized way of solving problems through experiments. Identification of the problem is crucial in this method of teaching. It focuses on some specific problem. Therefore, its success or failure depends on the problem chosen for students to solve. The problem should be of natural interest to students and should help them acquire practical and useful knowledge.

#### **Merits of Problem Solving Method**

- This method fosters concentration among students.
- It provides education in real-life situations.
- It aids in making logical decisions.
- It prepares students for adult life.
- It enhances critical thinking.



### **Demerits of Problem Solving Method**

- This teaching method requires a significant amount of time.
- It can become tedious if used excessively.
- It may overlook the element of excitement.
- Organizing content for this method can be challenging.

### **11.5.2 Project and Activity-Based Method**

In the project-based method, exploration, discovery, and finding out about something previously known to students are involved. Here, students decide which activities or experiments are essential and how to carry them out. The term "project" was originally used by engineers and surveyors in their projects, and then it was used in the sense of manual training. It meant that while assigning tasks, students had to plan activities like drama, modeling, charting, gathering pICTures, farming, and gardening. According to J.H. Kilpatrick, who was a student of John Dewey, "A project is a purposeful activity carried out in a social environment with commitment."

**Phases of Project** In any project, work is done in five phases, which are as follows:

i. **Selection of the Project:** The selection of the project is the first stage. It tells what the nature of the project is. The success of the project also depends on its nature.

ii. **Purpose Determination:** After selecting the project, it is necessary to determine its purpose. For this, the teacher creates an environment where students think and understand a problem by selecting a project and present it to the teacher. Now the teacher's job is to shed light on the merits and demerits of the selected project and make it clear to the students so that they choose the project from which they can understand the benefits.

iii. **Proper Planning:** Now the question arises before the students regarding their project, i.e., whether its timeline or sketch should be prepared. In other words, divide the work into parts so that the project can be completed in a natural environment. It is necessary for the teacher to guide in this stage because while distributing the work of the project, the ability of the students should also be kept in mind.

iv. **Executing the Project:** In this stage, the students start their project according to their timeline, i.e., they learn by doing activities. The teacher's job is to observe and assist when students face difficulties from time to time. In this stage, the teacher re-examines the results and estimates where the objectives have been achieved.

v. **Recording:** In this stage, students prepare a record of all the activities related to the project.

### **Kinds of Project**

Kilpatrick has mentioned four types of projects:

- i. **Constructive Project:** In this type of project, something is built, such as creating a model.
- ii. **Aesthetic Project:** The focus of this type of project is on aesthetic taste and enjoyment, such as presenting a music program.
- iii. **Problematic Project:** In this type of project, a problem is identified, such as how to solve unemployment.
- iv. **Drill Project:** In this type of project, a skill is acquired, such as making a drawing.

### **Merits of Project Method**

The merits of the project method are as follows:

- This method provides opportunities for self-expression.
- The purpose of the project method is to bring out what is inside the child.
- This method encourages learning by doing. Students get involved in their own activities.
- In this method, students work together in groups, which makes learning enjoyable.
- It promotes critical thinking in students.

### **Demerits of Project Method**

The demerits of the project method are as follows:

- The project method is time-consuming; it requires a lot of time.
- Knowledge is not acquired systematically through this method.
- It is expensive because it requires a lot of equipment and materials.
- It creates problems for experimental teachers.

### **11.5.3 Heuristic Method**

The term "heuristic" is derived from the Greek word "Heurisko," meaning "I discover." In this method, learners engage in independent exploration. Armstrong is associated with this teaching method. According to him, the spirit of discovery is sought in science. In this method, students are placed in a position to explore. It means that students learn by searching. This method emphasizes experimentation and turns the teacher into an observer, intervening only when necessary to guide and create a conducive environment, which eliminates mistakes in due

course. In Armstrong's words, the heuristic method involves exposing our learners to the opposite of discovered ways at altitude as far as possible, where instead of just telling things, they are discovered.

### **Steps of Heuristic Method**

The steps of the heuristic method are as follows:

- i. **Planning:** Planning involves identifying or recognizing the problem, forming objectives.
- ii. **Execution:** Execution involves observing correct results, including recorded observations.
- iii. **Conclusion:** In the conclusion, a correct solution is derived.

### **Role of Teacher in Heuristic Method**

The role of the teacher in the heuristic method, and indeed in all new teaching methods, is not easy because the teacher must have a treasure trove of knowledge and information. Therefore, the teacher occupies a different position in the teaching method, performing various roles:

- The teacher assists in identifying the problem, i.e., recognizing it, which the learner must then solve.
- The teacher encourages the expression of ideas, challenges ideas, or thoughts for investigation.
- The teacher never provides a solution or recommendation to the learners.

### **Merits of Heuristic Method**

The merits of the heuristic method are as follows:

- The learner becomes an active participant.
- It promotes scientific curiosity in students.
- It enhances the ability to observe and think in students.
- It is a psychological method.
- It fosters interest and competence in students through increased effort.

### **Demerits of Heuristic Method**

The demerits of this teaching method are as follows:

- This teaching method requires more time, which may prevent the completion of the entire curriculum within a specified period.
- Students find it difficult to obtain results.
- This teaching method demands extraordinary effort from the teacher.

- It requires a higher budget.
- This teaching method is not suitable for weak students.

### **Check Your Progress**

1. Describe the stages of the project method of teaching.
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## **11.6 Critical Appraisal and Classroom Implications of the Above Approaches**

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In the field of teaching, the role of the teacher is crucial in any circumstance because the teacher plays a central role in shaping the classroom environment. Depending solely on any perspective in the field of teaching cannot make a teacher's instruction better. Each method and approach has its merits and demerits. It is the responsibility of the teacher to choose an approach according to the students' needs, age, and level so that they can achieve the predetermined objectives.

### **Classroom Implications of Approaches**

The classroom environment should be made conducive through various perspectives to:

- Key importance should be given to creating an acquisitive environment.
- The teacher should remember that the chosen perspective is specific to the subject matter.
- It's advisable to use unit approaches for acquiring teaching and experience, provided through teaching activities.
- Subject-specific approaches should be used for organizing the curriculum, which includes materials related to specific subjects.
- Good approaches maintain coherence in the content.

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## **11.7 Learning Outcomes**

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After studying this Unit, you should have learned the following:

- Andragogy refers to the technique or science used to teach adults.
- Pedagogy refers to the art and science of teaching children.

- Lecture is a method where the teacher attempts to explain the subject matter in simple and clear language.
- Demonstration involves teaching through active engagement.
- Discussion is an activity where participants sit together and talk on a specific topic.
- Problem-solving involves understanding the method of solving a problem after choosing a problem.

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## 11.8 Glossary

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- Andragogy: The art and science of teaching adults.
- Pedagogy: The art and science of teaching children.
- Teaching Method: The method of delivering material to children.
- Perspective: The theory applied in teaching and learning activities.

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## 11.9 Unit End Exercises

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### Objective Answer Questions

1. What is the science used to teach adults called?
  - Andragogy.
2. From which language is the term "pedagogy" derived?
  - Greek.
3. What are the literal meanings of "pedagogy"?
  - The art and science of teaching.
4. Which teaching method does a sermon relate to?
  - Lecture.
5. Which teaching method is used to achieve psychological and motor objectives?
  - Demonstration.

### Short Answer Questions

1. Define Andragogy.
2. Define Pedagogy.
3. Explain the concept of Perspective.
4. What are the stages of the Lecture method?

5. Describe the Demonstration teaching method.

### **Long Answer Questions**

1. Explain the difference between Andragogy and Pedagogy.
2. Write a detailed essay on the Demonstrative teaching method.
3. Clarify the concept of the Project teaching method by identifying a title and explaining it.

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### **11.10 Suggested Learning Resources**

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1. Aggarwal, J.C. (2006) Teaching of Social Studies, Vikas Publishing House, New Delhi.
2. Das, B.N. (2016), Methods of Teaching Social studies, Neel Kamal Publication Pvt. Ltd. Hyderabad.
3. Kocher, S.K. (1984). The Teaching of Social Studies. Sterling Publication Pvt. Ltd. New Delhi.
4. Sharma, T.C. (2007). The Teaching of Social Studies. Sarup and Sons, New Delhi.

## **Unit-12: Innovative Techniques of Teaching at Tertiary Level**

### **Structure**

**12.0** Introduction

**12.1** Objectives

**12.2** Innovative Techniques of Teaching: Needs and Significance

**12.2.1** Causes of introducing modern teaching techniques

**12.2.2** Characteristics of innovative teaching techniques

**12.3** Effective Teaching Strategies and Techniques

**12.4** What is the best way to teach?

**12.5** Critical Appraisal and Classroom Implications of above Approach

**12.6** Learning Outcomes

**12.7** Glossary

**12.8** Unit End Exercises

**12.9** Suggested Learning Resources

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### **12.0 Introduction**

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Teaching, within a social and cultural context, is a complex social, cultural, and ethical process that plays a significant role in transforming society. This transformation begins within the classroom walls and extends to various aspects of a learner's life, influenced by different circumstances. The process involves multiple levels and stages. As we know, education and training are purposeful activities, and every purposeful activity yields results. The results depend on the objectives and the methods employed to achieve these objectives. Every method is based on certain educational theories. The successful implementation of these theories to achieve educational goals is known as teaching methodology. Educational theories establish certain principles, and techniques based on these principles help achieve the goals.

Having the aptitude, ability, competence, and skill is essential for implementing these methods or techniques. "Where there is readiness for change, there is hope for progress." Creativity is fostered, and one can benefit from innovative advantages. The teaching method is an educational process that serves as a means to achieve educational concepts. Through this process, an effort is made to highlight students' hidden talents and interests, uniting their scattered thoughts into a focused point. Instilling in students the curiosity to inquire and learn

independently, enhancing their enthusiasm and quest through various educational activities, and making them realize the purpose of their learning are crucial components of successful teaching.

To make teaching effective, a teacher does not use a single method in the classroom but adapts their teaching methods according to the context and situation. There is a Chinese proverb, "As many kinds of teaching as there are teachers." Every teacher strives to introduce innovation and novelty into their teaching methods according to their capability. The most effective teaching method is one that fosters a desire for self-learning and critical thinking in students. In this unit, we will study the innovative techniques and methods used in tertiary-level teaching.

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## **12.1 Objectives**

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After studying this Unit, you will be able to:

- understand the need and utility of innovative teaching methods
- explain the reasons for introducing modern teaching techniques
- describe the characteristics of innovative teaching techniques
- be familiar with effective teaching strategies and techniques
- select the best method of teaching

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## **12.2 Innovative Techniques of Teaching: Needs and Significance**

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"Everyone is talented. If you judge a fish by its ability to climb a tree, it will live its whole life believing it is stupid."

Innovative teaching techniques are those that encourage students to use a variety of creative and novel ideas. They employ modern resources to enhance students' intellectual attitudes rather than making them go through rote memorization. These techniques are primarily activity-based and focus on the cognitive level. Students fully participate in the learning process, which helps them enhance their knowledge and skills. Meanwhile, the instructor or teacher guides the students, ensuring they remain focused on the objectives of the subject. These techniques help reduce competition among students, promote cooperation, and strengthen the learning environment. Significant changes in teaching styles have further introduced interactive teaching methods. Unlike traditional methods, modern teaching techniques awaken the



consciousness of all students, emphasizing questions, demonstrations, clarifications, practical methods, and cooperation.

### **12.2.1 Causes of Introducing Modern Teaching Techniques**

In recent years, there has been a dramatic expansion in the scope of knowledge in the fields of science and technology. Human capacity to assimilate new knowledge in science and technology has also significantly increased. Consequently, there is a need for creative minds to explore unknown and undiscovered areas in various fields. Adopting modern techniques is the only way to navigate the technology-based era. These techniques educate students in a way that prepares them to face the challenges of the 21st century, which is heavily reliant on technology. For the nation's progress, creative and innovative minds are essential. The greatest benefit of these methods is that learners become self-aware, recognize their abilities, strengths, and weaknesses, and discover learning opportunities for others as well. These methods can be highly effective in curbing unemployment. Learners showcase their performance based on their convenience and inclination.

### **12.2.2 Characteristics of Innovative Teaching Techniques**

Innovative teaching techniques contribute to the constructive understanding and advancement of fundamental science and technology. The elements of modern teaching methods are as follows:

1. **Learning-Based:** A key characteristic of modern teaching methods in basic sciences and technologies is their focus on learning. They help students concentrate better. The teacher acts as a guide, while the learner actively participates in classroom interactions.
2. **Activity-Based:** The teacher organizes an activity or task, and students carry out these activities. Interactive activities are given priority.
3. **Resource-Based:** The teacher is aware of the available resources and distributes them among learners.
4. **Interaction-Based:** This feature makes modern teaching methods highly interactive. The teacher forms small groups of students or has students work individually to complete tasks and achieve desired results. Students learn to work together and cooperate, making it easier for them to adapt when they step into the outside world.
5. **Integration-Based:** An important feature of modern teaching methods is their integration. Teachers link social science subjects to real-life situations, making learners more familiar with these subjects.

6. **Collaboration-Based:** New teaching methods not only encourage students but also promote mutual cooperation and harmony. They appreciate others' work and prioritize collective interests, guiding them toward their goals.

Thus, we can say that innovative teaching techniques give students new ways to think. "The best teachers are those who show you where to look, but don't tell you what to see."

**Check Your Progress:**

Describe the characteristics of innovative teaching techniques.

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## **12.3 Effective Teaching Strategies and Techniques**

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### **Effective Teaching Strategies and Techniques**

The teaching method refers to the direct presentation by the teacher in the classroom. A single teacher uses different teaching methods based on the nature of the subject matter. The nature of these methods depends on the subject and the approach adopted by the teacher. These methods are sometimes referred to as teaching strategies or techniques. With advancements in the field of education, teaching methods have significantly changed. Teachers have brought innovation to their teaching while maintaining traditional chalk-and-talk and lecture methods. Now the board has become a digital board, and the classroom has become virtual. The purpose behind this is to enhance the level of learning, stimulate children's curiosity, and provide encouragement. For this purpose, teachers step out of traditional thinking and use innovative methods and techniques. If a teacher wants to become a successful educator, it is essential to take an interest in encouraging innovative methods. This can keep students engaged and enthusiastic. Finding new and modern teaching methods is an important skill for tertiary-level teachers. Cognitive research has shown that some methods genuinely promote the learning process. Innovative methods significantly enhance comprehensive learning outcomes in the classroom. The following innovative methods and techniques contribute to successful teaching:

#### **Brainstorming, Team Teaching, Concept Mapping, and Joyful Teaching.**

##### **(i) Brainstorming**

When Allah sent humans to Earth, He included curiosity in their nature. It is human nature that whenever faced with a problem, the mind quickly thinks of possible solutions, which

is why humans have succeeded in sustaining their existence. Whether solving a problem or answering a question, when humans use their minds to the fullest, the technique of brainstorming emerged. In teaching, this method stimulates students' minds, encouraging them to think and unleash their mental capabilities through brainstorming. Mental struggle is a group creative technique aimed at finding a solution to a specific problem through a list of ideas spontaneously provided by the participants. People can think more freely and suggest as many new ideas as possible without criticism. All ideas are noted without criticism, and after the brainstorming session, the ideas are evaluated, and the most suitable and effective idea is selected.

In 1939, advertising executive Alex Faickney Osborn developed this technique for creative problem-solving. When Osborn conceived this concept, he began writing about creative thinking, and the first notable book in which he mentioned the term "brainstorming" was "How to Think Up," published in 1942. Osborn identified two principles as crucial to "theoretical effectiveness":

- **Defer Judgment**
- **Reach for Quantity**

By following these two principles, Osborn established four general rules of brainstorming, aimed at reducing social inhibitions among group members, encouraging idea generation, and enhancing the group's overall creative capacity. These four rules are:

1. **Increase Quantity**
2. **Withhold Criticism**
3. **Welcome Unusual Ideas**
4. **Combine and Improve Ideas**

#### **Brainstorming in Education:**

Brainstorming is a group activity that encourages students to focus on a topic and freely express their ideas. The teacher initiates a brainstorming session by presenting a question or problem or introducing a topic. Then, students express possible answers, relevant words, and ideas. Every idea is accepted without criticism or judgment, and usually, these ideas are summarized on a whiteboard by the teacher. The ideas are recorded in their original form and then analyzed, typically through open class discussion.

#### **Stages of the Brainstorming Method:**

- First Stage: Provide the background of the problem or question.
- Second Stage: Conduct individual brainstorming.

- Third Stage: Hold discussions in small groups.
- Fourth Stage: Conduct group brainstorming.
- Fifth Stage: Prioritize and select the best idea.
- Benefits of Using the Brainstorming Method in Teaching:
  - Students focus on a specific topic.
  - A long list of ideas is obtained.
  - High-quality solutions are achieved due to the quantity of ideas.
  - Acceptance and respect for individual differences are fostered.
  - Students are encouraged to initiate sharing their ideas and opinions.
  - Students feel valued when their knowledge and ideas are accepted and appreciated.
  - Students have the opportunity to share ideas and enhance their existing knowledge through collaboration.

#### **Teacher's Role:**

- Establish an active, supportive environment. Encourage students and provide opportunities for all students to participate.
- Emphasize that the goal is quantity rather than quality, and that it is okay for students to think outside the box.
- Discourage peer review or critical comments during the idea-gathering phase.
- Initially emphasize the importance of listening to expressions of ideas and recording them, then review each contribution in the group.

Brainstorming sessions can be an effective strategy to encourage genuine collaboration and interaction in the classroom. A well-defined problem and carefully planned strategies can lead to the generation and construction of meaningful ideas that can be used to solve problems or address course-specific issues.

#### **Check Your Progress**

1. What are the benefits of using the brainstorming method in the teaching process?

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2. Describe the stages of using the brainstorming method in the teaching process in detail, and explain the teacher's role during these stages.

## **ii. Team Teaching**

Team teaching, also known as co-teaching or shared teaching, introduces innovation into the teaching process. It is a strategy where two or more teachers simultaneously teach the same group of students using the same topic and resources. For this type of teaching, all the teachers collaboratively plan for the students of a single class, prepare instructions, select materials, organize content, and develop assessment and evaluation tools. The teachers mutually divide their tasks based on their abilities. Through this method, students benefit from the knowledge and experience of multiple teachers at the same time.

### **Meaning of Team Teaching**

Team teaching refers to jointly conducted teaching at the same time by a group of teachers (two or more) instead of a single teacher. The concept of team teaching originated in the United States in 1954. In this type of teaching, to provide a supportive environment, two to four teachers jointly prepare lesson plans and systematically carry out their roles in teaching. A group of teachers simultaneously teaches the students of a single class.

### **Definition of Team Teaching**

According to Warwick, team teaching is a form of organization where teachers jointly handle the distribution of individuals and resources, create interest and skills, and meet the needs of students. According to Carlo Olson, team teaching is a scenario where two or more teachers with complementary teaching skills collaboratively plan, implement instructions, and use collective techniques and flexible scheduling and grouping for a single class of students.

### **Procedure of Team Teaching**

#### **Planning**

In this stage, teaching objectives are established and written in behavioral terms. The internal behavior of the learners is identified, decisions are made regarding the details of the teaching material, responsibilities for teachers are defined, instruction levels are determined, appropriate teaching aids are selected, and methods and means for assessing student performance are decided.

#### **Organizing**

This stage involves determining the level of instruction, selecting appropriate communication strategies, and presenting an initial leadership address by a competent and

qualified teacher from the team. Additionally, it includes providing motivation and encouragement to students and supervising activities.

### **Evaluating**

In this stage, students are asked verbal questions, decisions are made regarding student performance, learning difficulties of the learners are diagnosed, and remedial teaching is provided accordingly. Further modifications in planning and organization are also made.

### **Principles of Team Teaching**

Team teaching is organized based on the following fundamental principles:

#### **(i) Principle of Pooling the Resources**

Teaching resources, whether they are teaching aids or teachers, are used optimally. If a teacher possesses specific skills, their services are utilized for particular content. If the nature of the content requires more than two teachers, team teaching provides this facility.

#### **(ii) Principle of Joint Responsibility and Cooperation**

Team teaching is organized for teaching a specific group of students. This group has a leader who, along with an expert team (teachers), is present among the students based on their needs. All members of the team perform their shared responsibilities and are equally active in achieving the goals.

#### **(iii) Principle of Attending the Needs of the Students**

Team teaching is organized according to the needs, competencies, and interests of the learners. Since a team of teachers teaches as a whole, better opportunities are provided to address individual needs and difficulties of each student.

#### **(iv) Principle of Flexibility in Terms of Grouping and Scheduling**

This teaching method emphasizes flexibility in grouping the learners. This grouping can be a large class, a small group, or an individual level. The scope of flexibility also covers the determination of time and its scheduling, which is based on the nature required for teaching and learning.

#### **(v) Principle of Appropriate Selection of the Team Members**

This teaching method demands collective responsibility, which is possible only when teachers and learners are selected and grouped based on teaching and learning requirements. Flexibility is essential to ensure the effectiveness of this method.

### **Objectives of Team Teaching**

The objectives of team teaching are as follows:

- Effectively and efficiently use the skills of the available teaching team and instill a sense of shared responsibility.
- Improve the quality of teaching by utilizing the skills of more than one individual.
- Promote a positive attitude toward teamwork in teaching-learning situations.
- Reduce the risks of incorrect teaching by a single teacher and play a vital role in the development and preservation of human resources.
- Provide solutions to specific problems and difficulties in the curriculum/content based on the students' needs.

### **Characteristics of Team Teaching**

The characteristics of team teaching are as follows:

- It involves the services of two or more teachers, focusing on teaching strategy rather than training strategy.
- A team of teachers is responsible for achieving educational goals instead of a single teacher.
- A team of teachers jointly teaches a specific subject or part of it using common resources.
- It is also referred to as co-operative teaching, where a group of teachers teaches a class of students the same content using shared resources.
- Each teacher in the team plays an appropriate role in the teaching process based on their specific skills or expertise.
- The team of teachers is involved in planning the content, organizing students and the teaching process, providing suitable leadership, managing students and time, and jointly handling various types of evaluation responsibilities.
- The team of teachers collectively considers the students' needs and strives to meet those needs based on their abilities.

Team teaching brings multiple perspectives into the classroom, enriches the learning experience, and enhances the quality of education through collaborative efforts

### **Merits of Team Teaching**

#### **1. Develops a strong sense of responsibility and involvement among students:**

- Team teaching enhances students' confidence and sense of involvement.
- It provides opportunities for students to express their opinions freely.

#### **2. Helps students establish human relationships essential for social adaptation:**

- This teaching method aids students in developing social skills and building human relationships, which are crucial for social integration.

**3. Encourages teachers to work harder to enhance their professional skills:**

- Teachers are motivated to put in extra effort to improve their professional skills through collaboration and shared responsibilities.

**4. Provides students the opportunity to benefit from the specialized knowledge, skills, and experiences of multiple teachers simultaneously:**

- Students have access to the diverse expertise of various teachers, enriching their learning experience.

**5. Ensures the appropriate use of tools and resources:**

- Team teaching promotes the optimal use of teaching aids and resources, creating a flexible classroom environment.

**6. Maintains discipline by making better use of students' time and energy:**

- It helps maintain discipline by ensuring that students' time and energy are utilized effectively.

**7. Helps teachers in evaluating each other's work and fostering self-improvement:**

- Teachers can evaluate each other's performance, providing constructive feedback and encouraging individual and collective growth.

**8. Encourages both teachers and students to work in a holistic environment:**

- This method fosters a holistic learning environment where both teachers and students contribute to and benefit from the collective teaching process.

**9. Facilitates discussions and debates among students and teachers:**

- Team teaching provides opportunities for joint discussions and debates, encouraging critical thinking and engagement among students.

**Demerits of Team Teaching**

**1. Insufficient number of teachers as needed:**

- There might be a shortage of teachers to meet the requirements of effective team teaching.

**2. Lack of collaboration and cooperation among teachers:**

- Sometimes there is a lack of proper coordination and cooperation among the teachers involved in team teaching.

**3. Requires a large hall, which might not be available in every school:**



- This method often needs a spacious classroom, which may not be available in all schools.

**4. Cannot be implemented in every school due to lack of resources and facilities:**

- Team teaching might not be feasible in every school due to limitations in resources, teacher availability, and facilities.

**5. Teachers must constantly engage in new research:**

- Teachers need to be continually involved in research to stay updated; any lapse in this can hinder effective participation in team teaching.

**6. This method is time-consuming, costly, and requires considerable effort:**

- It demands significant time, money, and effort, and discussions can often be lengthy and exhausting.

**Check Your Progress**

1: Explain the meaning and concept of team teaching.

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2: Describe the objectives of team teaching and its benefits.

**iii. Mind Mapping**

Creating an engaging classroom environment that keeps students actively involved in the learning process is often challenging. A mind map is a visual tool used to organize information and material. It presents concepts in a way that captures attention and facilitates understanding. In this constructive teaching method, ideas related to a central theme are written in points around it, allowing students to easily see the connections between different concepts at various levels.

Unlike the linear method, which involves extensive written information, a mind map uses lines, symbols, keywords, colors, and images to present ideas in a simple manner. This technique, discovered by psychologist Tony Buzan in 1970, is now widely used in schools, business, and various fields. Mind maps are built around key elements, playing an important role in enhancing cognitive abilities and providing a comprehensive approach to learning and training. The flexibility of this method allows for its varied use during the teaching process.

**Definition:** "A mind map is a non-linear learning technique in which a central idea or concept is presented and further branched out. This grouping creates associations with other

related concepts, working similarly to how the human brain functions through neurons." – Buzan and Buzan, 1993

### **Uses of Mind Maps**

1. **Aids in memorizing material:**
  - Mind maps help students remember information more effectively.
2. **Makes presented information appealing and interesting to students:**
  - The visual nature of mind maps captures students' interest.
3. **Useful for formulating hypotheses and writing essays at early stages:**
  - This method can be used for hypothesis formation and essay writing at initial levels.
4. **Promotes critical thinking:**
  - It encourages critical and independent thinking, engaging students more deeply in the learning process.
5. **Focuses on critical and independent thought:**
  - Mind maps emphasize critical and free-thinking, keeping students actively involved in learning.
6. **Organizes information systematically:**
  - Information is presented in an organized and logical manner.
7. **Useful for problem-solving and information review:**
  - It aids in problem-solving and reviewing information.
8. **Availability of free online software:**
  - The availability of free online software has led to widespread use of mind maps today.
9. **Allows teachers and trainee teachers to present material logically:**
  - Teachers can present information in a structured and logical manner using this method.
10. **Ensures a smooth teaching and learning process in the classroom:**
  - The use of mind maps helps maintain a smooth and confident teaching process.
11. **Enhances understanding through visual representation:**
  - The visual presentation of material promotes better understanding among students.

12. **Flexible for varied use in the classroom:**
  - The flexibility of mind maps allows for various uses during classroom teaching.
13. **Used for teaching complex concepts and presenting extensive research projects:**
  - It is used for teaching new and complex ideas and presenting extensive research projects.
14. **Provides students with a comprehensive view of information on a single page:**
  - Complete information and ideas can be presented on one page for students to access.
15. **Ensures student involvement, enhancing communication skills:**
  - This method ensures student participation, which fosters co

### **Techniques of Developing a Mind Map**

1. **Write the central idea or concept in the middle of the paper:**
  - Start with the main idea at the center to keep all related concepts organized around it.
2. **Use different lines, symbols, images, colors, and circles to illustrate the relationship between the central idea and sub-points:**
  - These visual elements help in clearly defining the connections between various ideas and the central concept.
3. **Write other ideas around the central concept like branches:**
  - The related ideas should branch out freely from the central concept.
4. **Write points quickly without taking long breaks and without making revisions:**
  - This ensures the flow of ideas remains uninterrupted and natural.
5. **Leave some empty space around the paper for adding more information in the future:**
  - This allows for expansion and incorporation of new information as needed.
6. **Avoid making the mind map overly artistic:**
  - The focus should be on clarity and simplicity rather than artistic elements.

## **Teaching with Mind Maps**

Using a mind map is an ideal technique for presenting concepts in the classroom. It helps maintain students' focus and provides comprehensive information on a topic. Mind maps can also be used for brainstorming and discussions, encouraging student participation and helping them understand the relationship between the central concept and its related points. Additionally, mind maps can be used as an evaluation tool, allowing students to express their thoughts before and after a lesson.

### **Using Keywords, Colors, and Symbols**

The founder of this method, Tony Buzan, strongly advocated the use of keywords instead of sentences or phrases in mind maps. Keywords should clearly explain the meaning, context, and information related to the central idea. They serve as stimuli for students, helping to clarify previous vague concepts in detail. Using sentences or phrases can make it difficult to remember the information.

Different and appropriate colors can make mind maps more attractive, effective, and interesting, keeping students engaged in the learning process. Colors and symbols help distinguish between different ideas and points, making it easier for students to understand and remember concepts. A colorful mind map activates students' minds more effectively, and using symbols and images instead of words can have a positive impact on their memory.

### **Recommendations for Effective Mind Mapping**

1. **Use simple words:**
  - Teachers should use simple, non-complex words when creating mind maps to ensure ease of understanding.
2. **Ensure clear and attractive presentation:**
  - The central idea and sub-concepts should be printed or written clearly and attractively so students can read them easily.
3. **Organize concepts with colors:**
  - Different colors for different concepts and uniform colors for sub-concepts help in better understanding and recalling the material.
4. **Use images, symbols, and colors instead of words:**
  - This has a positive effect on students' memory and understanding.

5. **Connect central ideas with sub-ideas using lines:**

- Lines and cross-linkages should be used to show the relationships between ideas and concepts.

**Concept Mapping**

A concept map is a visual organization tool that can enhance students' understanding of a new concept. By using graphic organizers, students can think about the concept in various ways, deepening their comprehension.

**Why Use Concept Maps?**

- **Helps organize new information:**
  - Assists students in structuring new information meaningfully.
- **Establishes meaningful connections between the main idea and other information:**
  - Helps students see the relationships between concepts and how they fit into the bigger picture.
- **Easy to construct and can be used in any subject area:**
  - Versatile and straightforward to create, making them applicable across various disciplines.

**Steps to Create Concept Maps**

1. **Identify key ideas or concepts presented in the text:**
  - Focus on the main points or themes to include in the map.
2. **Organize concepts into categories:**
  - Inform students that as they gain more information and add it to the outline, the map's organization might change.
3. **Use lines or arrows on the map to show how sub-concepts are related:**
  - Ensure the connections between sub-concepts and the main idea are clear.
4. **Limit the amount of information on the map to avoid overwhelming students:**
  - Keep the map concise to focus on the essential concepts and their connections.
5. **Encourage students to review and complete the map:**
  - Motivate students to engage with and finalize their concept maps, reinforcing their learning and understanding.

## Meaning of Concept Map

A concept map is a visual tool or diagram that illustrates the relationships between various ideas to help you better understand these relationships. Every concept map, whether simple or complex, consists of two main elements:

- **Concepts:** These are usually represented by circles, ovals, or boxes and are called "nodes." They are connected by lines to show relationships between concepts.
- **Relationships:** These are depicted by arrows that connect the concepts, often including linking words or verbs in the arrows. These arrows are called "cross-links."

## Key Factors in Concept Mapping

The following factors contribute to the organization of an effective concept map:

- **Examine a topic in detail:** When creating a concept map, start with a general idea and work towards identifying subtopics. Analyze and organize the material from simple to complex.
- **Organize your thoughts:** If you and your team participate in brainstorming sessions or workshops, you will gather many ideas. Using a concept map template can help visualize and manage these ideas effectively.
- **Retain important information:** Studies show that visual learning is more effective than auditory learning. Therefore, a concept map can help build and structure knowledge when teaching a concept or topic.

## Types of Concept Maps

All types of concept maps share the same basic components: concepts and connectors. However, they can be organized in different ways, such as spider maps, hierarchical maps, system maps, and propositional structures.

## Concept Mapping and the Learning Process

Concept mapping enhances the learning process by:

- Providing understanding through visual representation.
- Encouraging brainstorming and higher-level thinking.
- Combining new and old concepts to synthesize information for a better understanding.
- Promoting the discovery of new concepts and their relationships, clearly conveying complex ideas.

- Fostering collaborative learning and assessing students' understanding.
- Developing creativity and identifying areas that need further knowledge or review.

### **Joyful Teaching**

Lack of student participation in the classroom often results in lower academic success. Friedrich Wilhelm August Froebel, a German psychologist and educator, studied young children's psychology and created teaching methods based on their favorite activities. His efforts led to the development of play-based learning, establishing the concept of Kindergarten, where children learn through playful activities.

### **Objectives of Joyful Learning**

The objectives of joyful learning include:

1. Enhancing student participation.
2. Connecting lessons to students' lives.
3. Making the teaching and learning environment interesting and pleasant.
4. Increasing students' attention and motivation.
5. Raising students' mental standards.
6. Assigning minimal homework.
7. Improving social intelligence.

### **Characteristics of Joyful Learning**

1. **Active student participation:** Prioritize individual interests and favorite activities to make the teaching method successful.
2. **Self-motivation:** Internal motivation encourages students to participate in all activities.
3. **Improved social intelligence:** Students progress in the learning process through mutual cooperation.
4. **Utilization of available resources:** Real objects, situations, events, and instruments in the students' environment form the basis of learning, making it easier to conceptualize.
5. **School as a miniature society:** Students learn not only from school but also from observing societal events, enhancing their skills and values.
6. **Hurdles in Joyful Teaching Method:** Since the nature and scope of interests change, students always find acquisition of new and enjoyable actions, so there is no boredom. Both the teacher and the learner are active.

### **Factors creating hurdles in Joyful Teaching Method:**

System of objections: If there is a system of objections in the educational system, such as the application of overly critical standards, inconsistency in educational policies, or failure of educational projects, then alarming situations for joyful teaching method may arise. Incompatibility of educational environment: An inappropriate and unfriendly educational environment can hinder the implementation of joyful teaching methods.

**Advantages of the Joyful Teaching Method:** The joyful teaching method has many benefits. However, it is not possible to teach every subject or topic using the same method. In addition, there are some factors that negatively affect its effectiveness, which are as follows:

1. **Teacher's interference:** Interfering with students' autonomy and freedom by dictating or controlling them can create barriers in joyful teaching.
2. **Avoidance of reprimand or punishment:** It is essential to avoid scolding or punishment as learners may experience mental distress due to these actions.
3. **Flexibility in acquisition:** There should be flexibility in the teaching approach. The teacher should not rigidly adhere to strict and structured plans.
4. **Minimal use of textbooks:** Instead of relying solely on textbooks, it is important to incorporate more games, activities, and recreational materials.
5. **Emotional intelligence of the teacher:** The teacher should have high emotional intelligence and be able to adapt their role according to the mental level of the students. They should approach students with a smiling face, love, and affection. The comprehensive personality of students is influenced by the teacher.

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## **12.4 What is the best way to teach?**

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Teaching effectively requires familiarity with modern teaching techniques and methodologies because there are many instructional approaches available to us. Teachers should select the instructional method according to the subjects, lesson objectives, capabilities of students, and their needs. It's essential to choose a method that suits different subjects because different subjects may require different approaches. Even for the same lesson, various instructional methods can be used. It's necessary to use a method that effectively conveys the true essence of the material to the learners.



The reasons for the failure of teaching include:

- Imposing an authoritarian atmosphere, overloading or underloading of content, presenting the subject matter in a difficult manner, involving students merely as listeners rather than participants in the learning process, neglecting students' psychological aspects, and not organizing and delivering the material effectively.

The most important principle of successful teaching is that before teaching a lesson, students must be well aware of its necessity and utility. Student satisfaction, participation, and engagement are crucial. Children should be taught what aligns with their nature and abilities. The teaching method should possess the following qualities:

- The teaching process should be easy and comprehensible. The language of instruction should be clear and engaging. The explanation of terminologies should be such that students can easily understand and articulate them. Teaching should proceed from the whole to the parts because students naturally prefer to see the complete thing first and then analyze its parts. The organization and delivery of material should be such that it remains naturally connected to both preceding and succeeding parts. New information should be provided by relating it to students' previous knowledge, experiences, social observations, and natural environment. Images, diagrams, illustrations, examples, video graphics, and simulations should be presented to clarify students' concepts. Students can be taken to the material through mobile phones and computers.

During teaching, appropriate questioning plays a significant role; it's an essential element in determining the quality of instructional planning. It provides direction to the teacher's teaching and serves as an important means of mental stimulation for students. It's necessary to prepare questions, ask them, and standardize the process of their analysis. Along with teaching, importance should be given to education because education makes a person capable of practical life.

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## **12.5 Critical Appraisal and Classroom Implications of above Approach**

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Innovative teaching techniques and methods create an effective and organized classroom environment. Just as the soul is essential for the body and fragrance for flowers, similarly, for successful teaching and an effective classroom, teachers and students' enthusiasm, planning,

exploration, and continuous assessment are essential. Nations' survival and unparalleled progress lie not in military forces but in the power of knowledge. If a teacher can convey this message to the students, no power in the world can destroy that nation. Teachers should continue to benefit from teaching as a student, meaning they should not let the students' enthusiasm and inquisitive nature die.

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## 12.6 Learning Outcomes

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- Teaching involves complex social, cultural, and ethical processes, emphasizing the need for sensitivity and adaptability.
- Competence, capability, talent, and skill are essential for implementing any method, technique, or approach.
- Readiness for change ensures progress.
- Everyone has potential, but it must be evaluated based on merit for healthy competition.
- Innovative teaching methods engage students in diverse perspectives and utilize modern tools to enhance their cognitive abilities.
- Modern teaching approaches stimulate students' curiosity and involvement in learning through questions, demonstrations, explanations, practical activities, and collaboration.
- Embracing new ways of learning prepares students for the challenges of the 21st century.
- Teaching is a vital component of education, with various schools of thought offering unique perspectives on teaching methods.
- Teaching can be divided into two main parts: teacher-centered and learner-centered approaches.
- Brainstorming fosters creative thinking and information gathering skills among students.
- Team teaching involves multiple educators instructing students together, fostering collaboration and engagement.

- Mind mapping is a non-linear technique that expands upon an initial concept or idea by associating related concepts in a structured manner, similar to how the human brain processes information.
- Concept mapping is a teaching technique that represents the relationship between ideas, using graphics and words to illustrate connections.
- Enjoyable teaching methods prioritize students' intrinsic motivation and satisfaction, leading to higher levels of acquisition.

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## 12.7 Glossary

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**Teaching Method:** The successful implementation of teaching theories to achieve educational objectives.

**Innovative Teaching Method:** Engaging students with various forms of innovative and rare thoughts and utilizing modern means to enhance their intellectual perspectives.

**Group Discussion:** Collaborative discussion among a group of individuals to explore a specific topic or concept.

**Analytical Thinking:** The ability to examine, understand, and evaluate a subject or concept in detail, enabling the identification of fundamental elements.

**Perceptiveness:** The ability to discern and differentiate between right and wrong and to think critically in order to smooth paths and promote thoughtful considerations.

**Critical Thinking:** The ability to distinguish between true and false, develop discernment, and facilitate reasoned thinking.

**Tertiary Level:** The stage of education following secondary education, typically at colleges or universities.

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## 12.8 Unit End Exercises

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### Objective Questions

1. For effective teaching, \_\_\_\_\_ is necessary.  
(a) Teaching talent (b) Teaching skill (c) Both a and b (d) None of these
2. Alport, Watson represent \_\_\_\_\_.

- (a) Teaching syllabus (b) Cooperative access method (c) Total instructional approach (d)

All of the above

3. Creating multimedia projects is \_\_\_\_\_.  
(a) Difficult (b) Complicated (c) Interesting (d) All of the above
4. Who introduced the term "Mental agitation method"?  
(a) Joseph Di Novak (b) Tony Buzan (c) Alex F. Osborn (d) Piaget
5. During the process of mental agitation, incorrect ideas and thoughts should not be accepted.  
(a) Yes (b) No (c) Correct them (d) All of the above
6. The first notable book in which the term "Mental Agitation" was mentioned.  
(a) How to Think Positive (b) How to Think Up (c) How do Think (d) None of the above

### **Short Answer Questions**

1. What is meant by innovative teaching techniques?
2. Why are innovative teaching techniques necessary?
3. Define teaching theories.
4. Explain the types of teaching methods.
5. What is meant by teaching based on mental disturbance?
6. What is meant by team teaching?
7. Write a brief note on mental mapping.
8. Explain conceptual mapping.

### **Long Answer Questions**

1. Provide examples of the need and effectiveness of innovative teaching techniques.
2. Describe the characteristics of innovative teaching techniques.
3. Discuss the factors necessary to make teaching methods effective in detail.
4. What is meant by mental disturbance? How can it be used in teaching?
5. Shed light on the joyous teaching method.
6. Explain team teaching in detail and discuss its effectiveness in the classroom.
7. Explain teaching based on concept construction in detail. Take any concept and map it out.
8. Critically evaluate the statement "Use of innovative teaching methods in the classroom: benefits and drawbacks."

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## 12.9 Suggested Learning Resources

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## **Unit 13: Introduction to ICT in Teaching and Learning**

### **Structure**

**13.0** Introduction

**13.1** Objectives

**13.2** Concept of ICT in Teaching and Learning

**13.3** Need of ICT in Teaching and Learning

**13.4** Use of ICT in Education

**13.4 (i)** Use of ICT in Classroom Teaching

**13.4 (ii)** Use of ICT in School Management and Administration

**13.4 (iii)** Use of ICT in Evaluation

**13.4 (iv)** Use of ICT in Research and Publication

**13.5** Disadvantages of ICT in Education

**13.6** Digital learners and ICT-specialized Teachers

**13.7** Learning Outcomes

**13.8** Glossary

**13.9** Unit End Exercises

**13.10** Suggested Learning Resources

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### **13.0 Introduction**

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Globalization and technological changes have formed a new economy driven by technology, information, and knowledge. The emergence of this new economy has altered the nature and goals of educational institutions. In this era, high-quality education is essential, and this educational standard can only be achieved through modern electronic devices, namely ICT (Information and Communication Technology). In today's world, it is inconceivable that our daily lives would be disconnected from ICT. Similarly, our schools and classrooms would be incomplete without ICT. In this unit, we will discuss ICT and its various tools with the objective of understanding their integration, usage, and effectiveness in education. As ordinary individuals and educators, we aim to enhance the quality of our education, which can propel our society towards progress. We can achieve this progress and welfare only through the advanced tools of ICT. To accomplish this, we reflect on the social environment and examine social angles through

the process of teaching and learning. Additionally, we utilize ICT in school management, evaluation, research studies, and publication to ensure our society advances.

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## 13.1 Objectives

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After studying this Unit, you will be able to:

- understand the meaning and concept of ICT.
- comprehend the scope and concept of ICT in teaching and learning.
- recognize the necessity and importance of ICT in education.
- understand the changing perspectives in teaching and the transformations in education.
- identify the use of ICT tools in various aspects of teaching and learning.
- grasp the role of ICT in research.
- understand the process of publication through ICT.

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## 13.2 Concept of ICT in Teaching and Learning

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In Indian society, education is recognized as a process that provides social, religious, economic, and spiritual development. Education is a human resource that promotes communicative competencies along with physical, mental, emotional, and social development. It also prepares us for economic growth and the responsibilities of future life. Therefore, high-quality education is essential. To foster and enhance education, it is crucial to understand ICT in the context of the modern era since ICT impacts our entire lives, and all activities now rely on it, whether it is education, news, banking, shopping, individual identity, or meeting with loved ones. ICT affects every individual and institution. Today, our lives have become digital. The use of technical and digital methods and devices such as computers, satellites, telephones, televisions, and the internet provides us with conveniences for daily life. These tools increase the efficiency and reliability of our work, saving time, energy, and money, allowing us to complete tasks on time with less effort and cost, which is only possible through ICT.

### **i. Meaning and Concept of ICT**

ICT (Information and Communication Technologies) is a field where we integrate multiple technologies that include various sources of information, different devices, and various

ICT techniques. These help us to easily complete educational, teaching, and all other life tasks while benefiting from them. ICT encompasses all electronic, digital, or technical devices capable of acquiring, searching, presenting, collecting, storing, easily modifying, retrieving, manipulating, organizing, and transferring information electronically or digitally.

The use of ICT tools and techniques refers to a set of ICT techniques and devices that collectively perform a task. ICT functions to collect, store, use, process, manipulate, distribute, evaluate, and convert information into knowledge. It includes old technologies like images, models, print materials, radio, television, telephone, and new technologies like computers, satellites, wireless technology, and the internet. These various tools are interconnected through wires or rays, maintaining mutual coordination and accessing each other through different networks. This connectivity forms a network, and multiple networks collectively create the World Wide Web (www), also known as the Networked World.

## **ii. Relationship of ICT and Education**

The development of any society depends on its education, which clarifies the direction in which we are steering our society's future. Today's era is characterized by information and knowledge, and each society is recognized for its access to and timely use of information and knowledge. Schools have the responsibility to organize education according to contemporary standards and use new strategies and methods to brighten the future of society. For this purpose, they must rely on ICT, as today's information society faces numerous challenges in the realm of education, making the use of ICT in education essential.

### **Scope of ICT**

The scope of ICT is vast, encompassing all aspects of our lives. Whether it is education, teaching, politics, tourism, commerce, banking, shopping, or communicating with a distant friend, ICT provides us with various techniques and avenues for all these activities and is integrally involved in every aspect of our lives. In today's modern era, we cannot even teach without the help of ICT, as it has created a network of technologies and technical devices around us that accompanies us step by step. ICT is not only limited to the field of education but also permeates every aspect and moment of our lives. Even when we sleep, our mobile phone continues to perform tasks for us, making it our most personal companion in today's world.

Let's see how ICT affects our life and education:

- ICT is involved in all our daily activities.
- ICT enhances the professional skills of students and teachers.



- ICT fosters educational and professional competencies through teaching and learning.
- ICT provides opportunities for distance education and adult education.
- ICT encourages the use of multimedia packages in education and assists in their creation.

### **Check Your Progress**

Explain the relationship between ICT and education.

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## **13.3 Need of ICT in Teaching and Learning**

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Education is considered a concept that reflects our society. The standard, philosophy, values, and objectives of education determine the progress of our society. Hence, it is said, "Schools are the mirror of society." Education evolves with the nature of society, and modern techniques influence education. Today is the era of technology. Let's see why ICT is needed in education:

- Education is a lifelong, continuous process where day and night have no significance. Hence, we should have the facility to learn anywhere and anytime, which ICT provides. With its help, we can access education online or offline anytime and anywhere.
- Today's era is one of information and knowledge, and every society is recognized by this nature. Therefore, it is crucial for us to access information and knowledge individually and collectively. With ICT, we can obtain all kinds of information and enhance our knowledge without any hindrance.
- ICT fulfills the needs of society.
- With ICT, we can make education effective while saving time, energy, and costs.

### **Importance of ICT in Education**

- ICT tools can be used in the learning process to enhance students' learning experiences and make them long-lasting.
- ICT allows us to obtain up-to-date information immediately, evaluate it from different sources, use it, share it, and understand others' perspectives.

- Every individual student can use ICT according to their needs, convenience, and leisure anytime and anywhere.
- ICT enables us to store our materials in a small memory device and use them anytime and anywhere when needed.
- ICT is a multimedia approach that makes teaching, learning, and training processes effective.
- With ICT, we can access and use e-content, e-libraries, and open educational resources available on the internet.
- ICT promotes distance education and adult education.
- ICT allows us to use various multimedia communication channels effectively, including online conferencing, providing feedback to students.

The use of ICT in education is crucial as it enhances the effectiveness of our education. To achieve educational goals, various ICT techniques serve as means to accomplish these objectives. Today's era is one of science and technology, and ICT helps us adapt to this era.

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### **13.4 Use of ICT in Education**

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The modern era is characterized by LPG (Liberalization, Privatization, and Globalization), where the nature of every need and task extends beyond just one society or country to the entire world, much like a global village. Here, every individual is connected to one another through ICT, maintaining constant communication. Hence, we refer to this era as the "Digital World," and the people living in it as the "Knowledge-Based Society." ICT enables us to live in this digital world. In today's context, the importance and necessity of ICT in every aspect of education are paramount. To meet these needs, we must integrate ICT into every educational activity, ensuring our teaching and learning processes align with the demands and requirements of the modern era.

#### **13.4 (i) Use of ICT in Classroom Teaching**

Change is a natural process in every society, and education is always part of this evolution. When we seek to bring about change in education, we look towards science and technology. In the 21st century, ICT has played a pivotal role in transforming every aspect of school education, whether related to teachers, teaching methods, students, or school administration. In today's context, ICT is essential in every educational process. Teachers hold a

central role in the teaching process; here, we will review how ICT has transformed teaching methodologies.

- **Changes in Teachers' Roles:** Teachers' roles have evolved; they are now responsible for not only guiding and consulting but also creating a conducive teaching environment. They must equip the classroom with ICT tools according to the subject matter.
- **Role of Teachers in ICT-Based Teaching:** In an ICT-based teaching process, teachers are no longer just instructors but also act as facilitators and observers.
- **Planning and Observation:** In an ICT-based teaching process, teachers now plan lessons and learning experiences, creating an environment where students can learn at their own pace, interest, capability, and need. Teachers observe and provide guidance to correct students' mistakes.
- **Use of ICT in Various Educational Activities:** ICT is essential in tutorials, projects, research, and scientific and language laboratories. Various ICT tools are available to perform these tasks efficiently.

With ICT, we can use traditional methods and e-services such as:

- **E-Content**
- **E-Library**
- **E-Tutorials (Synchronous and Asynchronous)**
- **E-Teaching Learning Materials**
- **E-Laboratory**
- **E-Evaluation and Assessment**

All the above ICT tools can be used in teaching and learning. Additionally, we can use various Open Educational Resources (OER) and ICT services like E-Learning, Blended Learning, Flipped Learning, Social Learning, Web-Based Learning, and Virtual Learning to enhance our educational practices.

#### **13.4 (ii) Use of ICT in School Management and Administration**

Incorporating modern and scientific techniques into society brings about change, and education is no exception. In the 21st century, ICT has played a significant role in transforming every aspect of school education, whether related to teachers, teaching methods, students, or school administration. The use of ICT is essential in today's era. Let's review the following points:

### **Use of ICT in Student Management and Administration**

- **Student Management:** ICT facilitates the organization and management of students.
- **Registration and Enrollment:** ICT is used in the registration and enrollment processes.
- **Class Schedule Records:** ICT is utilized to manage and record class schedules.
- **Student Attendance:** ICT helps in tracking student attendance.
- **Communication with Parents:** Electronic techniques are used to maintain communication with students' parents.
- **Providing Information:** Various media are used to provide students with homework, references, guidance, and consultation, as well as communication links with teachers.

### **Use of ICT with School Staff**

- **Recruitment and Job Allocation:** ICT is used for new staff recruitment and job responsibility allocation.
- **Attendance and Leave Records:** ICT helps in maintaining attendance and leave records.
- **Annual Performance Records:** ICT is used to keep records of staff's annual performance.
- **Announcements and Advertisements:** Media is used to ensure announcements and advertisements reach the staff.

### **Use of ICT in General Administration**

- **Exam Seating Arrangements:** Information about seating arrangements for exams is provided through media.
- **School Software (e-Kiosk):** Information about the institution is disseminated through school software.
- **Publishing Grades and Results:** Student grades and results are published through media.
- **Online Fee Payment:** Various fees can be paid online.

All the tasks mentioned above utilize ICT, ensuring reliability and saving time for school administration in recording and retrieving information. ICT has become a dynamic tool in school management, essential for implementation in all schools. Other various tasks involving ICT in school administration include:

## **Record Keeping in Schools**

School records hold significant importance, and their preparation and retrieval can be challenging. However, with ICT, we can manage these records efficiently. School records include student records, teacher records, school identification records, and affiliation records.

### **Student Records:**

- **Attendance:** Records of student attendance.
- **Skills and Abilities:** Records of students' skills and academic and non-academic performances.
- **Historical Records:** Records of students' past performances and history.

### **Teacher Records:**

- **Educational Qualifications:** Records of teachers' educational qualifications.
- **Salary and Attendance:** Records of teachers' salaries, attendance, and leaves.
- **Performance Records:** Records of teachers' academic and non-academic performances.
- **Career History:** Records of teachers' past achievements, character, and habits.
- **Promotions and General Records:** Records of teachers' promotions and other general information.

**Timetable Records:** With ICT tools, we can create timetables for all school activities, which may range from one hour to a semester or an academic year, including:

- **School Calendar:** Annual schedule of school activities.
- **Teaching Timetable:** Schedule for teaching and learning activities.
- **Exam Timetable:** Schedule for examinations.
- **Meeting Timetables:** Schedules for various meetings.

Several school-specific software solutions are available to manage the above tasks effectively. For example, using Google Calendar, we can create an annual school calendar and share it with teachers, students, and parents, providing them with the schedule of school activities, including school hours, subjects, and various academic and non-academic events.

### **Technical Tools for Parent Communication**

- **E-Mail:** Providing information about the school and students to parents.
- **Mobile SMS:** Establishing immediate contact through text messages.
- **School Website or Blog:** Regularly updating the school's website with information, accessible to the broader public.

- **Social Network:** Using social media platforms like Facebook, Twitter, blogs, and WhatsApp to maintain contact with parents, create groups based on various needs, and inform them about students' performances.

Incorporating ICT in school management and administration significantly enhances efficiency and ensures effective communication and management of educational processes.

### **Use of ICT in Evaluation**

ICT has also established its influence on the methods of educational evaluation. It has made the difficult task of assessment easier, more interesting, and broader. With the help of ICT, teachers keep a record of students' data and other information and use these records for evaluation when needed. Using computers and various software applications, we can evaluate a large number of students in a reliable manner in a very short time. Computers and the internet have also greatly facilitated the work of assessment. Now, students can self-assess online and offline. Teachers can easily prepare various test papers, rubrics, and blueprints for classroom exams and analyze the marks obtained by students using computers. By using Microsoft Excel, we can perform various types of statistical analyses to evaluate students, prepare mark sheets, and even present online results.

- Teachers can collect all academic and non-academic records of students and use them for evaluation when needed.
- Teachers can now conduct online exams, provide feedback, and upload results.

### **Digital Tools for Evaluation**

**Learning Management System (LMS):** ICT offers numerous LMS tools that assess various student performances and provide different evaluation methods, including question banks, modules, etc. LMS is software that assists teachers, school administrators, and learners in the learning process, available both online and offline, incorporating various evaluation techniques.

**Rogo:** Developed by the University of Nottingham, Rogo is an online assessment system that allows the creation of questions and tests for evaluation and the generation of various reports. It can conduct surveys, exams, and contains a collection of fifteen different types of questions for use.

**Hot Potatoes:** This software includes six different applications that enable the creation of various questions for student assessment. It is a web-based system (WWW) and is completely free. Other applications similar to Rogo include OSCATS, Concerto, e-Box, and My-Exambox.

## **Use of ICT in Research and Publication**

Research is a challenging task where we follow a specific process to find a solution to a problem, requiring a high degree of caution and the use of several reliable tools. In research, the first step is to identify a problem, for which we need various ICT tools and techniques to find a problem that has not yet been researched and whose solution is within our capability. Once the problem is identified, we review related literature to analyze its various aspects and find the right path for our research. After finding the path, we determine the research methodology, collect data relevant to the problem using these methods, analyze the data with statistical tools, test our hypotheses, and interpret our findings. We then present our report with references, recommending solutions to the problem.

For this challenging work, we need technical tools at every step, available online and offline through ICT. ICT allows us to search for problems, analyze related literature, collect data, and derive results using statistical methods. We can perform all these tasks using ICT tools, making our research reliable and credible.

### **ICT Tools for Research**

#### **Tools for Searching and Identifying a Problem:**

- **E-mail:** For transferring material, exchanging ideas, and establishing communication.
- **E-Journals:** For finding problems, understanding different theories, and knowing the fundamentals of research.
- **E-Books/E-Library:** For accessing materials related to the problem and verifying the issue.
- **Internet:** For obtaining all relevant materials regarding the problem.

#### **Review of Related Literature:**

- **Shodhganga:** (<http://shodhganga.inflibnet.ac.in/>)
- **Sakshat Portal:** (<http://www.sakshat.ac.in/>)
- **e-Gurukul:** (<http://e-gurukul.net/>)
- **E-Journals:** (<http://www.e-journals.org/>)

#### **Collection of Data:**

- **Survey Gizmo:** (<https://www.surveygizmo.com/>)
- **Survey Monkey:** (<https://www.surveymonkey.com/welcome>)
- **Google Surveys:** (<https://surveys.google.com/google-opinion>)

#### **Referencing:**

- **Refman:** (<http://endnote.com/>)
- **Citavi:** (<https://www.citavi.com/en/research.html>)
- **Citation Machine:** (<http://www.citationmachine.net/apa/cite-a-book>)

#### **Checking Plagiarism and Grammar:**

- **Bibme:** (<https://www.bibme.org/grammar-and-plagiarism/>)
- **Plagscan:** (<https://www.plagscan.com/en/>)
- **Grammarly:** (<https://www.grammarly.com/>)

#### **Thesis Publication Tools:**

- **Pothi:** (<https://pothi.com/>)
- **edX:** (<https://www.edx.org/edx-terms-service>)
- **Coursera:** (<https://www.coursera.org/>)

#### **ICT in Publication**

The use of ICT is prevalent in all areas of life, and its inclusion in education has revolutionized every aspect of it. ICT has also made its mark in the field of educational publication. Whether it is print or electronic, online or offline, computers and various other tools are being used in all forms of publication. Today, with just a computer and a printer, we can perform desktop publishing (DTP), which includes creating books, various documents, images, graphics, and both print and electronic materials. We can also incorporate different designs, tables, and images into our publications. There are software tools available in all languages to assist us in this work.

- **Microsoft Office**
- **Adobe PageMaker**
- **Page Plus 6**
- **Adobe InDesign**
- **Corel Draw**
- **Frame Maker**

We can perform all tasks related to publication with the help of a computer and publish online, as well as prepare offline books. There are also various software and websites available for online publication, which we can use to accomplish our publishing goals.

#### **Check Your Progress:**

1. Identify the ICT resources that assist in collecting relevant material.



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## **13.5 Barriers of ICT in Education**

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ICT is considered a means of the changes in 21st-century education. However, due to various underprivileged educational institutions and other obstacles, the full utilization of ICT in education is not possible. Some of these obstacles include:

- Establishing an ICT-based system in educational institutions requires significant funds, including various instruments. Many educational institutions cannot establish this system and thus cannot fully benefit from ICT.
- ICT is continuously evolving with new techniques and tools. As soon as a new technology or tool emerges, it requires professional experts, experience, and money to use it, which poses a significant challenge.
- ICT tools like computers, the internet, and online resources do not fully nurture a student's development, and parents do not trust students as they may use online resources that are socially and morally inappropriate.
- ICT facilities are not available in all regions of the country. Poor, remote, and average areas lack these facilities, preventing ICT from being fully implemented nationwide.
- We are still not mentally prepared to use ICT. In a country where people need advertisements to learn about toilets, talking about Digital India seems dishonest.

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## **13.6 Digital Learners and ICT-Specialized Teachers**

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The ICT capabilities of teachers and students are a combination of individual academic, technical, and professional skills. These skills can be developed individually by engaging with the latest ICT tools, which is referred to as ICT literacy. This can be achieved through the inclusion of modern ICT tools in teaching and other practices, along with a well-planned approach.

Training Digital Learners and ICT-Specialized Teachers:

- Introducing students and teachers to modern knowledge, various skills, technical traditions, trends, and new educational developments.

- Presenting up-to-date information related to various subjects to students and teachers individually.
- Providing students and teachers with professional skills related to ICT, new techniques, and research.
- Sharing knowledge, various theories, and experiences with weak teachers and students.
- Establishing ICT-based strategies and a stress-free learning environment in the school setting.

Education is a continuous process of professional skills development and advancement, where students and teachers gain autonomy in skills and factors, establish their standards, and benefit society through their knowledge and actions. This can only be achieved through quality teaching, which is only possible with the use of advanced modern ICT tools.

- **Electronic Learning**
- **Blended Learning**
- **Social Learning**
- **Collaborative Learning**

In today's era, we use modern methods and tools to achieve learning that is always with us, known as mobile learning. This involves the availability of electronic materials at all times, including various sounds, images, animations, and videos, which we use to establish different theories, experiences, and communication.

### **Check Your Progress:**

1. What is the role of mobile learning in collaborative learning? Explain.

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## **13.7 Learning Outcomes**

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After studying this Unit, you should have learned the following:

- It is crucial to understand ICT in the context of today's era for the development and promotion of education, as ICT affects our entire life, and all aspects of life depend on it.
- Whether it is education, news, banking, shopping, personal identification, or meeting with loved ones, ICT influences every person and organization.

- In ICT-based teaching processes, teachers are no longer just instructors but also observers.
- Using various types of media to provide information to students, including homework, references, guidance, consultation, and communication with teachers.
- School records are highly important and challenging to prepare and retrieve, but with today's ICT, we can manage them very effectively.
- With the help of ICT tools, we can prepare separate schedules for all school-related activities in the school timetable.
- Various ICT tools and techniques are available to maintain simultaneous contact with all students and their parents.

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## 13.8 Glossary

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**Open Admin for School:** An application for organizing school activities online.

**Mobile SMS:** Messages can be sent to all parents via mobile.

**Virtual Learning Environment:** School software that provides students with virtual learning experiences and experiments.

**Media Sharing:** A software application for sharing media.

**Learning Management System:** Manages all learning activities.

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## 13.9 Unit End Exercises

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### Objective Answer Questions

1. Can the use and organization of ICT tools in schools be successful? a) Only in cities b) Only in villages c) Only with a plan d) Cannot be successful
2. What is the abbreviation for ICT? a) Information Communication Technologies b) Information and Communication Technique c) Information Communication Technology d) Information Communication Technique
3. Does ICT help in the management and evaluation of schools? a) Teachers b) Students c) School system d) All of the above
4. Which software is used in ICT-based publication? a) MS Office b) PDF c) Corel Draw d) None

5. Which is not used in ICT-based teaching? a) Computer b) Internet c) WWW d) Chalk duster

### **Short Answer Questions**

1. Introduce online tools used in evaluation.
2. What changes have occurred in the role of teachers due to the use of ICT?
3. How can we use ICT in research?
4. How can we overcome the barriers to using ICT?
5. How can an Indian digital society be formed?

### **Long Answer Questions**

1. Introduce modern tools that assist in establishing management in schools.
2. Why is a Management Information System necessary in schools?

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## **13.10 Suggested Learning Resources**

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## **Unit 14: Impact of ICT in Teaching-Learning**

### **Structure**

- 14.0** Introduction
- 14.1** Objectives
- 14.2** Paradigm shift in Teaching and Learning due to ICT
- 14.3** Changes in Content and Curriculum Construction
- 14.4** Paradigm shift in Methods of Teaching
- 14.5** Online and Virtual Classroom Management
- 14.6** Role of Teachers in ICT-enabled Classroom
- 14.7** Learning Outcomes
- 14.8** Glossary
- 14.9** Unit End Exercises
- 14.10** Suggested Learning Resources

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### **14.0 Introduction**

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In our country, India, there is a movement called Digital India aimed at transforming Indian society into a knowledge-based society through the use of ICT (Information and Communication Technology). To achieve this goal, we need to familiarize our society with ICT so that we can convert current information into knowledge and foster the holistic development of students. To achieve this, we must organize our education system, base the curriculum on ICT, and use various technical tools and strategies in teaching all subjects. Alongside this, it is essential to equip teachers with ICT knowledge and skills, promote ICT-based teaching in schools, and spark students' interest in using ICT. This will enable our students to recognize, acquire, disseminate knowledge, understand new inventions and technical tools, and integrate these experiences into their daily lives, which is the primary goal of ICT. To achieve this, we must incorporate various ICT tools and techniques into education. ICT alone can transform our society into a knowledge society, making it crucial for us to understand and utilize ICT in all educational sectors. In this unit, we will discuss various topics related to the use of ICT in teaching and the changes it has brought to education.

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## 14.1 Objectives

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After reading this Unit, you will be able to:

- understand the changing perspectives of teaching and the use of ICT in education.
- describe the significant changes brought by the use of ICT in teaching and learning.
- understand the impact of ICT on the curriculum.
- understand the impact of ICT on teaching subjects.
- understand the management and use of ICT-based online and virtual classrooms.
- understand the changes in the role of teachers due to the use of ICT.

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## 14.2 Paradigm shift in Teaching and Learning due to ICT

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According to UNESCO, ICT is a scientific discipline that uses technical tools for communication and is based on a constructivist management approach, providing various information and enabling its use, affecting our society, politics, commerce, economy, culture, and traditions.

Based on UNESCO's definition, we can say that ICT is deeply related to our personal and social lives, and its use in education is increasing. Every element and activity related to education, including students, teachers, the school curriculum, school administration, and everyone associated with education, utilizes ICT tools for educational improvement.

Traditional teaching and learning processes have many limitations in acquiring and experiencing knowledge. This process is unidirectional, where teachers often engage with students for an hour, hoping that when they ask questions, students will reproduce the taught material. Some limitations of traditional education, which ICT has now transformed, are highlighted below:

- ICT has transformed the theoretical approach of traditional teaching into experiential learning.
- Traditional teaching lacks interaction between students, teachers, and learning, while ICT-based teaching provides tools and applications for students to individually experience knowledge without spatial, temporal, or numerical limitations.

- In traditional teaching, student performance is limited and often subject to the teacher's discretion. ICT-based classrooms offer all students individual access to explanations and examples, allowing them to engage as often as needed.
- Traditional teaching has limited scope for creativity, focusing more on theory than practice. In contrast, ICT-based teaching prioritizes students, organizing both practical and experiential activities according to students' physical and mental capabilities, fostering creativity.
- Traditional education curricula are not student-centered but based on societal, national, philosophical, political, and community needs. ICT focuses on student-centeredness, emphasizing individual abilities, interests, needs, and future practical life in curriculum development.
- Traditional education emphasized reproductive learning, focusing on returns from educational investment, whereas ICT-based educational activities focus on presenting realistic, artificial methods.
- ICT-based educational activities adopt an integrative learning approach using various techniques and tools, clarifying even minor differences, which traditional education fails to achieve.
- ICT-based teaching incorporates various techniques and tools to open multiple pathways for knowledge acquisition, allowing students to explore and form their own theories. Traditional education recommended deriving experiences from theories, contrasting ICT's approach.
- Traditional education cannot present environments, objects, or scenes that ICT-based teaching can achieve using computers and various applications.
- ICT makes the teaching-learning process active and purposeful.
- ICT mobilizes students, increasing their participation in learning activities.
- ICT provides teachers with better educational material and more effective teaching methods, enabling them to transform traditional teaching practices. We use ICT in various ways in education.

### **List of ICT-based Educational Resources on Computers**

(Translation stops here as the document continues with a new section on ICT-based resources which was not fully included in the provided text.)

(CAL-Computer Assisted Learning)	(CAI-Computer Aided Instructions)
(CBT-Computer Based Teaching)	(CML-Computer Managed Learning)
(CBE-Computer Based Evaluation)	CMI-Computer Managed Instruction)

### **Various Uses of Computers in ICT**

These uses provide us with different experiences and practical activities, along with artificial learning environments and individual exercises. These include several topics such as Simulation, Tutorials, Drill and Practice, Laboratory Support Method, and Programmed Instructions, which offer a synthetic environment for students to gain individual learning experiences. Additionally, we have various learning applications available online and offline, such as:

#### **Table of Artificial Instructional Tools in ICT**

1. Web-Based Training
2. Co-operative Learning
3. Web-Based Learning
4. Collaborative Learning
5. Web-Based Instructions
6. Project-Based Learning
7. Blended Learning
8. Flipped Classroom
9. Virtual Classroom
10. Smart Classroom

#### **Traditional Teaching vs. Artificial Learning Methods**

From ancient times, education was teacher-centered. The role of teachers was considered crucial in the individual development of students. The goal was to transfer knowledge to students by breaking down the content into small pieces, using traditional methods like chalk and blackboard, and encouraging students to forcefully acquire knowledge. Students considered rote learning and internalizing everything as education. However, with the advent of ICT, the essence of education has transformed, shifting from teaching to individual learning processes. Students' interests, needs, values, and future preparation have become the focal points of education. Learning is now recognized as a natural process, aligning education with social, dynamic, inclusive, and contextual factors that match the students' abilities and skills. It is now clear when,



where, and how education should be provided, involving the roles of teachers and students and the use of instructional tools, methods, and strategies. For instance:

- ICT-based learning emphasizes the use of technological tools and techniques.
- ICT content focuses on understanding and experiences of subject concepts.
- ICT-based content is closely related to life and common activities.
- ICT establishes various skills, inclusive learning processes, performance-based learning, and experiential laboratories.
- Instructional systems, such as flipped classrooms, smart classes, and problem-based learning, are based on observations and experiences.

### Paradigm Shift in Traditional vs. ICT-based Teaching

Traditional Teaching	ICT-based Teaching
Teacher-centered learning processes and activities	Student-centered learning processes and activities
Lack of connection between theoretical concepts and practical experiences	Establishing connections between theoretical concepts and practical experiences is the primary goal
Teacher-centered	Student-centered
Pre-determined and clarified topics, objectives, and teaching methods	New topics, new objectives, new experiences, and creativity

ICT has significantly influenced education, transforming 21st-century education entirely. This change is referred to as a "Paradigm Shift in Education." The use of ICT has not only changed teaching and learning but also the curriculum structure, content, teaching methods, and the roles and relationships of teachers and students. We will understand some of these changes in detail below.

### Check Your Progress

1. What do you understand by artificial learning methods? Explain.
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### 14.3 Changes in Content and Curriculum Construction

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The curriculum is considered an essential component of the teaching and learning process. Experts involved in the construction of the curriculum and the determination of subjects should review the existing curriculum each academic year and incorporate the latest ICT tools, making their inclusion mandatory. The modern curriculum and subject matter should prepare students for the future. As we all know, the present era is the era of ICT, and in this era, there will be a need for people who can perform various professions related to human life with the help of ICT, utilize ICT, and achieve objectives professionally. The current curriculum and subject matter are dynamic and emphasize the use of science and modern techniques. One significant change in education due to the paradigm shift brought by ICT is the transformation in the curriculum and subject matter.

The National Knowledge Commission, in its 2009 recommendations, clearly stated that the upcoming era would be dominated by technology, and we need to prepare our future generations for this. The current curriculum and subject matter have undergone significant changes due to the incorporation of ICT. For instance:

**Comparison Table of Traditional Education and ICT-Based Education**

<b>Different Aspects Included in Curriculum Construction</b>	<b>Traditional Curriculum and Subject Matter</b>	<b>ICT-Based Curriculum and Subject Matter</b>
<b>Classroom Activities</b>	Teachers determine them	Students determine them themselves
	Uniform activities for the entire class	Some student participation
	Very few activities	Numerous varied activities
	Limited learning pace through activities	Learning pace according to students' mental abilities
<b>Collaboration</b>	Individual	In teams
	Uniform student groups	Diverse student groups
	Everyone works for themselves	Students help each other

<b>Different Aspects Included in Curriculum Construction</b>	<b>Traditional Curriculum and Subject Matter</b>	<b>ICT-Based Curriculum and Subject Matter</b>
<b>Coherence</b>	Reproductive learning	Innovative learning
	Predefined solutions for learning problems	Seeking new solutions for learning problems
	No relation between theories and experiences	Deep connection between theories and experiences
	Separate subjects	Interconnected subjects
	According to the course	According to the topic
<b>Assessment</b>	Involvement of one teacher	Involvement of a team of teachers
	According to the teacher's guidance	According to students' abilities
	Summative assessment	Diagnostic assessment

ICT has introduced various dynamic elements in the curriculum content across different subjects, incorporating ICT tools, techniques, and applications in teaching, which include practice exercises, diverse theories, discussions, assessment, and feedback. Different subjects' content is now equipped with ICT teaching tools, and multimedia is used in teaching, projects, exercises, and home assignments for better clarity and engagement.

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## **14.4 Paradigm Shift in Methods of Teaching**

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Teaching methods are crucial in the field of education because it is through these methods that teachers transfer their subject matter, knowledge, skills, etc., to students. The method of teaching can be defined as "the way subject matter is presented to students in the classroom." Each subject has its specific teaching methods. ICT (Information and Communication Technology) has completely changed the nature of education, bringing significant changes in teaching methods. In ancient times, teacher-centered methods were used. In the medieval period, student-centered methods emerged, and in the modern era, the laissez-faire approach, where students' work is minimally interfered with, is being used. This includes

computer-based teaching, program learning, flipped learning, online learning, and computer-based learning methods like CAI (Computer-Assisted Instruction), CMI (Computer-Managed Instruction), CML (Computer-Mediated Learning), along with gaming, tutorials, laboratory support methods, drill and practice, etc. This shift has made the teaching and learning process focused on students' mental abilities and interests, limiting teachers to providing instructions, facilitating learning environments, obtaining student observations, and giving feedback.

In an ICT-based educational environment, teaching methods are used considering students' performance, such as:

<b>Traditional Teaching Methods</b>	<b>ICT-Based Teaching Methods</b>
Teacher-centered (Autocratic)	Student-centered (Democratic and Laissez-faire)
Uniform instructions for the entire class	Instructions based on individual student needs
Uniform learning pace	Methods and pace based on students' intellectual abilities
Learning limited to school premises	Continuous learning process
Learning instructions and facilities only during school hours	Learning can happen anytime, anywhere
Fact-based	Critical and investigative thinking alongside real methods
Individual student development	Collaboration and dialogue between teachers and students
Curriculum based on textbooks	Various resources of modern fundamental information
Parent-teacher meetings after each exam	Daily parent-teacher communication

### **Check Your Progress**

1. Highlight the differences between ICT-based teaching methods and traditional teaching methods.

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## 14.5 Online and Virtual Classroom Management in Teaching and Learning

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### Virtual Classroom

Today's teaching environment is based on online teaching. The COVID-19 pandemic has necessitated the need for online teaching. India's new National Education Policy 2020 also recommends promoting online teaching. The Indian educational administration has centrally approved online teaching and instructed all institutions to start "online learning" and "blended learning" and establish their management, which is both a necessity and a compulsion in the modern era. Falling behind in this educational pace would render the quality of our education ineffective.

When we use modern ICT techniques in online teaching, various ICT-based teaching environments are available to us, one of which is known as the "Virtual Classroom." Let's see how to manage and use virtual classrooms in education.

The concept of a virtual classroom emerged around 1960 when a scientist at the University of Illinois in the USA first used a computer connected to a classroom for teaching, presenting digital content to students. As technology advanced, the use of ICT techniques in classrooms increased, making teaching easier. In 1993, Johns University officially started online programs, and virtual classrooms began to be widely used for students. The first use of the internet in 1995 brought a significant change to online classrooms. In this setup, teachers and students are not physically present with each other but connect over long distances using the internet, interacting and exchanging educational content through various conferencing methods. When we talk about online or virtual classrooms today, it means that students and teachers are online and using various web-based ICT teaching and communication tools to conduct teaching and learning activities. A virtual classroom is like a traditional classroom, but the difference is that students are at a distance from the teacher and interact face-to-face using computers and the internet. Various ICT tools are used to conduct teaching in virtual classrooms.

Teaching in a virtual classroom is provided in the following ways:

- Through electronic content.
- Through audio and video conferencing.
- Through teleconferencing and web conferencing.
- Through podcasting.

## **Management of Virtual Classrooms**

In the present era, the use of virtual classrooms has become essential for teachers. All ICT technical tools and methods are designed to be easy and user-friendly, making it convenient for any educator to manage. Using and organizing a virtual classroom is both easy and engaging. Here are some aspects of managing a virtual classroom:

### **1. Flexible Learning Environment**

A virtual classroom is very straightforward for teachers. Educators can provide lectures either live (Online - Synchronous) or recorded (Online/Offline - Asynchronous). The foundation of a successful virtual classroom is its flexibility, allowing teachers to record their lessons. This flexibility ensures that if a student misses any class or lecture, they can revisit the lesson at their convenience, from any location and at any time, to gain the knowledge they missed.

### **2. Democratic Environment**

Another feature of the virtual classroom is the establishment of a democratic environment where students can freely express their views and opinions.

### **3. Economical**

Once a virtual classroom is set up, there are no recurring costs, and it continues to function in the teaching process. A lecture provided in a virtual classroom remains available online for years. This reduces teaching costs significantly, and students do not need to travel to educational institutions, saving infrastructure, operational, and human resource costs.

### **4. Accessible**

Students have continuous access to the virtual classroom. They can collaborate online with each other for educational activities and share their thoughts and ideas at any time. The accessibility of the virtual classroom is easy as it operates via the internet. Teachers receive feedback through comments, likes, and dislikes, helping them improve and organize the virtual classroom further.

## **Benefits of Virtual Classrooms**

Just like traditional classrooms, virtual classrooms provide opportunities for student participation in the learning process. However, a significant advantage of virtual classrooms is that students can assess their performance even after the lesson ends, as all students have equal opportunities.

### **1. Big Scope of Virtual Classroom**

The scope of virtual classrooms is vast. Students and teachers can participate from anywhere in the world without geographical restrictions and benefit from the teaching and learning process. Teachers understand this broad scope and tailor their teaching topics according to time and place.

### **2. Different Aspects of Communication**

The greatest advantage of virtual classrooms is the variety of communication opportunities they offer. Teachers and students can interact in various ways, using multiple communication tools. Teachers should consider the relevance of the subject matter and instructional tools while teaching.

### **3. Synchronous Learning**

Virtual classrooms provide synchronous learning opportunities, allowing students and teachers to interact in real-time. This offers a traditional classroom-like environment where students can get immediate feedback. Additionally, when a teacher engages with a group of students, the learning experiences become more interesting and stronger.

### **4. Learning with Different Resources**

Teachers have the opportunity to use a variety of multimedia, digital, online, offline, and traditional tools simultaneously to complete their teaching. This helps students understand the subject matter better and strengthens their knowledge related to the topic.

### **5. Coordination of Different Resources**

In virtual classrooms, students can share various learning resources with each other, most of which are electronic. For example, students can share PowerPoint presentations (PPT), Excel sheets, PDFs, etc., with one another.

### **Limitations of Virtual Classrooms**

Virtual classrooms also have the following limitations:

#### **1. Lack of Brotherhood**

Students may experience a lack of interpersonal interaction.

#### **2. Technical Deficiencies**

There can be technical issues that hinder the learning process.

#### **3. Lack of Learning Structure**

The absence of a structured learning environment can affect the learning experience.

#### **4. Lack of Individual Experiences**

One significant drawback of virtual classrooms is that students miss out on individual hands-on experiences. Particularly in subjects requiring practical and performance-based learning, virtual methods cannot replace real-world experiences. In virtual classrooms, knowledge is primarily provided through mental engagement rather than sensory experiences.

#### **Check Your Progress**

1. Explain the limitations of virtual classrooms.
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### **14.6 Role of Teachers in ICT-Enabled Classrooms**

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Historically, education was seen as an teacher-centric endeavor, where the teacher's word was final, and the teacher held a highly respected position in society. However, with the advent of ICT in education, it became apparent that all educational efforts should focus on the well-being and development of students. The philosophy of education has shifted to constructivism, prioritizing the learner's role in the educational process. Modern education is student-centered rather than teacher-centered.

Despite this shift, the role of teachers in education remains crucial. In ICT-enabled education, teachers' roles have evolved to focus on guiding and facilitating students, influenced by the tools and scientific equipment provided by ICT. Educational experts, teachers, researchers, and school administrators recognize that the introduction of modern technical and scientific tools has transformed teaching and learning processes, altering teachers' roles. Educational experts agree that modern teaching and learning tools do not automatically create a new learning environment; instead, they provide excellent opportunities for change, which can be realized with teachers' help. While teachers may operate behind the scenes, they still play an essential role in the educational process. Teachers need specific ICT competencies to effectively deliver ICT-based education. Those wishing to master ICT-based teaching must adapt to new roles and functions in ICT-enabled classrooms, including:

- Facilitating learning and creating an educational environment.
- Influencing and creating knowledge rather than force-feeding it.



- Guiding, advising, and mentoring students.
- Observing and providing feedback.

### Comparison of Teachers' Roles in Traditional and ICT-Based Education

Traditional Education Roles	ICT-Based Education Roles
Instructor, Director	Mentor
Knowledge Creator	Facilitator
Classroom Manager	Communicator
Coach	Collaborator
Administrator	Supervisor
Skill Creator	Skill Educator
Data Collector	Data Analyst

In ICT-enabled education, teachers' roles have completely changed. The table above shows that teachers' responsibilities have expanded, as creating and managing an ICT-based educational environment and organizing learning experiences for students is a complex task. However, modern ICT tools make this challenging task much more manageable.

### Check Your Progress

1. Explain the role of teachers in ICT-based education.
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## 14.7 Learning Outcomes

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After studying this Unit, you should have learned the following:

- According to UNESCO, ICT is a scientific system that utilizes technical tools and is based on constructivist principles, providing various information and enabling their use.
- In traditional teaching, students' activities are limited or focused on teachers' intentions, whereas in ICT-based education, all activities are explained with examples and are available individually for all students, allowing them to engage according to their interests and needs.

- Education has now shifted from teaching to individual acquisition factors, including students' interests, needs, abilities, and future aspirations.
- The concept of a virtual classroom was first introduced around 1960 at the University of Illinois, where a scientist first used a computer to integrate it with classroom teaching.
- In ICT-based education, the role of teachers has evolved to facilitate learning outcomes and establish a teaching environment.

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## 14.8 Glossary

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**Synchronous Learning:** Online live broadcast.

**Cooperative Learning:** An online application that facilitates cooperative learning activities.

**Collaborative Learning:** Students work together collaboratively on a problem.

**Project Based Learning:** Students work on a project under supervision.

**Blended Learning:** The use of online learning along with traditional education.

**Flipped Classroom:** An application providing online lessons.

**Web Based Learning:** Learning based on the internet and solely on the internet.

**Virtual Classroom:** An artificial or virtual classroom.

**Smart Classroom:** A classroom where the teacher uses various communication techniques and tools.

**Mobile Learning:** Learning facilitated through mobile devices.

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## 14.9 Unit End Exercises

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### Objective Answer Questions

1. Is there a paradigm shift in education due to ICT?
  - a. Significant changes in the role of teachers
2. What is a virtual classroom?
  - b. Offline
3. Who is responsible for organizing the virtual classroom?
  - a. Teachers'
4. How have the roles of teachers changed with the use of ICT in education?

- b. They have become easier
5. Who has been affected by the use of ICT techniques?
- b. Educational environment

### **Short Answer Questions**

1. Write detailed notes on the benefits and drawbacks of virtual classrooms in the field of education.
2. How have the roles of teachers changed in ICT-based lessons?
3. Explain how lessons have become easier with the use of ICT.
4. How is an artificial classroom organized?
5. How are the changes in Indian digital learning affecting society?

### **Long Answer Questions**

1. Introduce the modern tools of auxiliary ICT used in organizing the structure in school.
2. Why is the management information system necessary in schools?

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## **14.10 Suggested Learning Resources**

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## **Unit 15: e-Learning and Web Based Learning**

### **Structure**

**15.0** Introduction

**15.1** Objectives

**15.2** Concept of e-Learning

**15.2.1** Definition and Explanation of e-Learning

**15.2.2** Why Should We Use E-Learning?

**15.2.3** Key Elements of Using e-Learning

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**15.6** Mobile Learning

**15.7** Learning Outcomes

**15.8** Glossary

**15.9** Unit End Exercises

**15.10** Suggested Learning Resources

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### **15.0 Introduction**

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Education is a process through which the standards, culture, civilization, ethics, habits, culture, and philosophy of a nation are manifested. This educational process is crucial and essential for the progress of society. To achieve success in this educational process, responsible institutions in society remain vigilant in making acquisition theories and experiences successful along with teaching practices. This process of education undergoes various changes over time because the nature of education includes formal education, informal education, and non-formal education, and each of these methods of education has its own importance. When in the 21st century electronic devices and the internet stepped into the field of education, these three methods of education were influenced, and the use of modern electronic devices and the internet in education began to be apparent. In the present era, the process of education does not appear effective without the service of modern electronic devices and the internet. Over the past two

years, despite the COVID-19 pandemic, the educational process has continued unabated, and only due to the use of modern technical tools and the internet, the educational process is progressing rapidly. In this unit, we will understand the educational factors of e-learning, which is the use of modern technical tools, web-based learning, which involves the use of the internet, and mobile-based learning, along with the process of its use in teaching.

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## 15.1 Objectives

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After studying this Unit, you will be able to:

- understand the concepts of e-learning, web-based learning, and mobile-based learning
- utilize e-learning, web-based learning, and mobile-based learning
- highlight the differences between e-learning, web-based learning, and mobile-based learning
- understand teaching practices based on various modern technological tools
- utilize internet-based learning

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## 15.2 Concept of e-Learning

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Electronic learning, e-learning, or e-acquisition refers to the use of modern electronic devices in the teaching and instructional field to make the learning process effective. E-learning or e-acquisition is a formal approach to teaching where a system of learning is developed with the help of electronic resources to enhance teaching and learning, whether in a structured classroom environment or artificially. The use of modern technological tools such as computers, the internet, websites, mobile devices, and other technological tools and resources in education is called e-learning. E-learning is also considered a means of transferring skills and knowledge. In this transfer process, we simultaneously reach a large number of students with the help of modern technological tools, establish communication, and maintain a connection with each individual student. We provide equal learning opportunities to all students, maintain their interest, offer a learning process at their own pace, and create various artificial environments to obtain students' ideas and experiences.

Electronic learning is an easy and comprehensible process in education that benefits both students and teachers. In e-learning, typically, all educational topics are adorned with various modern technological tools and A/V teaching materials. For example, if we want to teach students about "environmental pollution," explaining the quantity of different gases in the environment and the sources causing pollution, we can try to explain this with charts, models, and blackboards in traditional teaching, but success is uncertain. In contrast, in e-learning, we can effectively demonstrate this process using video and animation with the help of various modern technological tools. We can explain the carbon dioxide and oxygen cycles to students using computers and other modern technological tools. This teaching process is highly successful since students are fully engaged with attention, interest, and dedication, and this process is accessible to all students. They can also repeat and learn the process themselves, which includes practical exercises.

Since the use of ICT in education began, the goals, methods, and tools of education have all changed. The initiation of electronic learning occurred with the use of techniques and modern electronic devices in education, which has been around for many years. First, television entered this field, followed by overhead projectors, computers, 3D simulation, video conferencing, and internet forums. As technology advanced, the scope of electronic learning expanded. In today's era, there may hardly be any field in which electronic learning is not providing its services. E-learning is a combination of two words, "e" for electronic and "Learning," where ICT provides a vehicle. We use ICT for various activities of electronic learning. All activities of e-learning are based on electronic devices, which are connected to the internet to enable students to acquire knowledge. E-learning accommodates both online and offline methods of education.

### **Online E-Learning**

In online e-learning, there are two prevalent methods: synchronous (direct) and asynchronous (recorded). This includes online lectures, video conferencing, provision of e-materials, and online discussions. The purpose of online education is to provide students with education at home through the internet. Along with audio-visual tools, electronic devices, and electronic materials are also provided in online education. Discussion and consultation are included through conferencing to provide guidance related to education, ensuring that students do not face any difficulties.

## **Offline E-Learning**

In offline learning, computer-based teaching and learning are provided along with modern technological tools. This includes Computer-Assisted Learning (CAI), Computer-Based Learning (CBL), and Computer-Based Teaching and Training (CBT), enabling students to grasp the relevant subject. Various programs are available in computer-based electronic learning according to the nature of teaching and the objectives, providing a path to achieve the desired outcomes. These include e-tutorials, simulations, drill and practice, laboratory support methods, gaming, and programmed learning, which engage students with great interest and dedication, resulting in long-lasting knowledge.

### **15.2.1 Definition and Explanation of e-Learning**

In the modern era, every field of life is incomplete without modern electronic devices. The use of these devices in all aspects of education is necessary, and this use is known as electronic learning or e-learning. E-learning can be defined and explained as follows:

- **E-learning**, also known as online and digital learning, is a method of acquiring knowledge through various electronic technologies and media resources.
- **E-learning** refers to electronic acquisition processes that are not constrained by time, place, presence, or environment.
- **E-learning** includes theories, experiences, training, immediate feedback, and explanations with examples enriched with audio/video and animations.
- **E-learning** incorporates various types of media applications that provide audio, video, text, images, animations, recorded lectures, and streaming, all obtained through specific ICT applications.
- **E-learning** provides students with explanations, examples, and experiences related to the content, which are used for individual learning, collaborative learning, and the creative process of comprehensive dynamic learning available 24/7. Students can use it at their convenience, at their own learning pace, and according to their interests to acquire the desired knowledge.

### **15.2.2 Why Should We Use E-Learning?**

- **E-learning** enhances the importance and effectiveness of teachers' lessons.
- **E-learning** makes understanding the subject and content easier.
- **E-learning** allows for more effective evaluation of students.
- **E-learning** establishes long-term and experience-based learning processes for students.

- **E-learning** fosters research and critical thinking in students.
- **E-learning** fulfills students' observational and practical activities.
- **E-learning** promotes global knowledge and practical information among students.
- **E-learning** is easy to use, cost-effective, and requires less effort.

### 15.2.3 Key Elements of Using E-Learning

There are millions of e-learners worldwide. Today's e-learners come from diverse backgrounds and are of all ages. Most e-learners are working professionals or individuals seeking additional knowledge to continue their education or improve their opportunities. The following e-learning tools are essential:

- **Self-confidence, motivation, and self-discipline** are required to gain knowledge through e-learning.
- **Clear objectives and planning** are necessary for e-learning.
- **Integrate daily life activities, work, and other educational experiences** into the learning process in e-learning.
- Schools and colleges should have all the resources and facilities for managing and maintaining e-learning.
- **Access to appropriate time and necessary equipment** for e-learning, such as:
  - Computers (mini-computers, microcomputers, laptops, mobiles, tablets, palm-tops, etc.) and other devices.
  - Learning platforms that include LMS (Learning Management Systems), which convert schools into e-schools.
  - Uninterrupted electricity supply such as light, inverter, UPS battery, etc.
  - E-content (written material, images, sounds, graphics, animations, avatars, etc.).
  - Network and internet availability such as LAN, MAN, WAN (wireless, fiber optics, mobile network, etc.).
  - Application software, open resources, website access (subscription), and arrangement of open online and offline resources.

### 15.2.4 Advantages of e-Learning

E-learning focuses on the needs, abilities, goals, and interests of students. All courses, activities, and processes in e-learning are designed with students' needs in mind, making them user-friendly.

- **E-learning** is self-paced and self-directed.



- **E-learning** allows students to spend additional time on complex materials adorned with explanations and examples, facilitating long-term learning.
- **E-learning** enhances student interest and participation using various media such as audio, video, animations, avatars, simulations, lab support, tutorials, and trial and error.
- **E-learning** provides opportunities for shy (introverted) students who do not actively participate in educational activities.
- **E-learning** is simple and easy to understand, maintaining student interest.

#### 15.2.5 Limitations of e-Learning

- **Lack of Social Interaction:** In e-learning, students miss out on the personal touch and camaraderie of teachers and friends.
- **Challenges in Rural Areas:** While beneficial for urban areas, e-learning can be challenging for rural areas due to the lack of complete facilities.
- **Possibility of Cheating:** In exams, students might resort to cheating, or dummy students might take the exams.

#### 15.2.6 Changes Brought in Education by E-Learning

- **Integration of Technology:** E-learning has made the inclusion and use of technology in teaching mandatory.
- **Use of Modern Devices and Techniques:** Students have started using modern devices and techniques due to e-learning.
- **Changes in Evaluation and Curriculum Structure:** E-learning has brought changes in the assessment and curriculum framework.
- **Changing Roles of Teachers:** The roles of teachers have evolved with e-learning.  
E-learning also includes various e-services alongside traditional methods:
- **E-content:** Accessing electronic content.
- **E-library:** Utilizing electronic libraries.
- **E-tutorials:** Using synchronous and asynchronous electronic tutorials.
- **E-teaching materials:** Creating and using electronic teaching materials.
- **E-laboratory:** Using electronic laboratories.
- **E-evaluation and assessment:** Employing electronic evaluation and assessment methods.
- **E-open educational resources:** Using electronic open educational resources.

All the modern electronic tools mentioned above can be used in teaching and learning. Additionally, we can utilize various open educational resources and software applications like

smart classrooms, virtual classrooms, web applications like YouTube, SlideShare, e-tutorials, quizzes, graphics, animations, etc. Using these electronic teaching tools, we can strengthen students' theoretical and practical knowledge, which will be based on their interests and inclinations.

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### 15.3 Difference between Classroom Learning and e-Learning

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Traditional education generally remains confined to the four walls of the classroom, a method prevalent in India since ancient times. In this setup, teachers present the same content to all students in the same manner, where the learning process includes uniform content, teaching methods, strategies, teaching materials, and activities. If students want to learn, they must be present at the specified time and place. If a student is absent, they miss the lesson provided by the teacher and lose that opportunity forever. Teachers teach the same material to all students in the same way, disregarding individual needs, abilities, interests, and learning paces. This group is encouraged to progress and acquire knowledge together, often leaving many students behind. In contrast, e-learning considers students' individual abilities, needs, and paces, offering a flexible learning process based on their convenience. Students can choose the time, place, and learning activities and experiences, keeping in mind their physical, emotional, and social needs.

#### Comparison between e-Learning and Classroom Learning

<b>E-learning Learning Factors</b>	<b>Traditional Classroom Learning Factors</b>
E-learning is always available to students without any constraints of time, duration, or place. Students can learn anywhere.	Traditional classroom learning requires the presence of students and teachers, and students must attend the class.
E-learning provides more opportunities for students, allowing them to repeat lectures, content, or exercises, gain additional knowledge, and skip topics as needed.	In classroom learning, there is a structured plan to be followed, completing each topic one by one within the scheduled time.
E-learning is obtained through easy, engaging, and low-cost methods, with minimal fees or free courses available.	Traditional education involves significant expenses for students, including books, tuition fees, accommodation, food, and travel costs.

<b>E-learning Learning Factors</b>	<b>Traditional Classroom Learning Factors</b>
In e-learning, there are no restrictions on knowledge, content, activities, and exercises.	In classrooms, each student must adhere to the rules.
E-learning requires expert teachers and carefully constructed courses that can be used for up to ten years.	Classroom teaching allows teachers to impart knowledge based on their various skills, making it a simpler process.
Evaluation in e-learning is straightforward and credible, performed using different tools.	Classroom evaluation involves traditional formative assessments and summative exams.
Managing a class in e-learning can be challenging, with potential technical issues and difficulties in controlling students.	In traditional education, teachers can effectively observe and manage students and maintain classroom discipline.

Both e-learning and classroom learning have their own advantages and disadvantages. Classroom learning often sees higher attention and focus from students, while e-learning depends on technical tools. If teachers can achieve the desired outcomes through e-learning, it can be highly beneficial.

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## 15.4 Concept of Web-Based Learning

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Web-based learning, also known as web-based education, is the process of learning through the World Wide Web (WWW). Sometimes, e-learning is also considered synonymous with web-based learning because it includes online course material. Generally, web-based learning involves discussion forums, social media, video streaming of live lectures, and A/V conferencing facilitated by the web. Access to learning material is provided online, including electronic content (word, pdf), e-books, e-journals, and magazines, along with open resources and subject-based resources. Various websites, interconnected through hyperlinks, are also part of this. Teachers and students use the internet and web-based resources for learning. Nowadays, web-based learning is commonly used for distance education and online education.

### Essential Tools for Web-Based Learning

- **Web-based internet connection:** Internet, World Wide Web

- **Chat room, computer, webcam, speaker, etc.:** (Chat Room, Computer, Webcam, Speaker, etc.)
- **Conference tools:** For immediate feedback.

## **Types of Web-Based Learning**

### **Tutorials**

Online tutorials are a type of instructional program designed to provide complete knowledge on a particular subject. Tutorials present a topic with examples, pICTures (A/V aids), animations, etc., in a way that mimics traditional education. Web-based learning programs are typically simple and sequential. Online tutorials are created to transform information into knowledge in an orderly manner for students. They utilize multimedia, such as images, 3D pICTures, recorded audio lectures, video lectures, animations, avatars, and project techniques. These methods enhance the learning process, enabling students to self-assess their progress, identify mistakes, and correct them.

### **Online Discussion Forum**

Online discussion forums are similar to online conferencing but focus on a specific topic. Participation does not require physical presence; you just need to be online. These forums are a common instructional method in online courses, held at predetermined times and topics. They help students clear doubts, assess their knowledge, and improve performance. The role of teachers in these forums is to guide and facilitate, making the discussion sessions informative and advisory. Teachers help students understand their shortcomings, provide assistance, and explore other resources. Communication can be both direct and recorded.

### **Virtual Classroom**

In web-based learning, an online classroom environment can be created, known as a virtual classroom. It is equipped with various educational tools and techniques, similar to traditional education, and provides online lessons on specific subjects. Virtual classrooms use ICT teaching tools and multimedia, such as audio, video, animations, and 3D pICTures, to explain complex topics in an artificial manner.

Additionally, various tools are used in web-based learning, such as:

- Google Classroom
- Blackboard Learn
- Learning Management System (LMS)

- Moodle
- MOOCs and SWAYAM
- Zoom Meetings, Google Meet, etc.

### **Advantages of Web-Based Learning**

Web-based learning connects students and teachers worldwide, providing access to renowned experts. It allows quick access to, modification, and distribution of specific information to students across different countries simultaneously. Web-based learning is cost-effective, with programs remaining effective for a long duration, fostering interactive discussions among students. Some advantages of web-based learning include:

- Students can choose the time, place, and material according to their convenience.
- Course material is available online in various formats.
- Learning can be tailored to individual mental pace and abilities.
- Real-life examples and best practices are provided.
- Virtual classrooms address all subjects and questions.
- Immediate feedback is available, allowing students to self-assess.
- Connections and exchanges with students and teachers from different regions.
- Students gain various experiences through web-based learning.

### **Disadvantages of Web-Based Learning**

- Web-based learning can lead to social isolation.
- Lack of individual attention.
- Maintenance and effective tutorials can be lacking.
- Technical issues may arise.

### **Check Your Progress**

1. Describe the types of web-based learning.

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## **15.5 Difference between e-Learning and Web-Based Learning**

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We will attempt to clarify the differences between e-learning and web-based learning. To understand this distinction, it's important to keep in mind the definitions of e-learning and web-based learning provided above.

## E-Learning vs. Web-Based Learning

<b>E-Learning</b>	<b>Web-Based Learning</b>
E-learning uses electronic devices.	Web-based learning requires electronic devices along with the internet.
In e-learning, the presence of students and teachers is not mandatory; learning can occur solely through a learning management system or electronic devices.	In web-based learning, teachers generally participate with students through virtual classes, Zoom meetings, and web conferencing.
Any electronic device can be used in e-learning.	Web-based learning requires students to use websites and browsers.
E-learning can utilize both online materials and electronic devices such as computers.	Web-based learning provides materials online, recorded, and in the form of open educational resources to students.
For evaluation in e-learning, a management system can be used, which can work offline as well.	In web-based learning, student evaluation is done online, with teachers providing virtual examples and explanations.
In e-learning, students can independently perform practical exercises using various technical devices.	In web-based learning, teachers support students through recorded or live sessions, conduct discussions, and guide project preparation.

Both e-learning and web-based learning utilize modern tools and enhance the learning process. They emphasize the use of advanced technological tools in education, providing students with freedom and catering to their needs and interests, allowing them to acquire necessary knowledge without any stress or constraints according to their convenience.

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## 15.6 Mobile Learning

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### Concept of Mobile Learning

Mobile learning refers to the process of learning facilitated through mobile devices. Students use mobile applications to access subject material and engage in discussions, debates, and conferencing with instructors or guides. They participate in live meetings and search for and

utilize resources on the internet as per their needs. Nowadays, mobile devices are considered essential tools for communication and have become quite affordable, leading to a significant increase in mobile learning.

In mobile learning, instructors and students connect through mobile devices, staying in touch 24/7 to resolve doubts, gain knowledge, and access content, videos, and other programs. Mobile learning is a very convenient and straightforward method of learning.



### **Key Components of Mobile Learning**

**Learner:** In mobile learning, the student is the focal point of the instructional and learning process. The design and structure of mobile learning are tailored to meet the learner's academic needs. Learning programs are developed, including the nature of the course, course materials (A/V and other content), course delivery, learning activities, performance, evaluation, and certification. These programs are made compatible with mobile learning either directly or through a management application.

**Teacher:** In mobile learning, the teacher identifies the academic needs, interests, and abilities of the students and prepares the subject content accordingly. This content is then

delivered to the students via mobile devices. Teachers work behind the scenes but also conduct live sessions with students periodically.

**Content:** Content is critical in mobile learning due to the physical distance between teachers and students. The content must be engaging, easy to understand, straightforward, and designed to meet the students' academic needs in a sequential manner.

**Learning Environment:** The learning environment in mobile learning is crucial. The student must create their own learning environment, recognizing the necessary tools, methods, and settings, including time, internet connection, location, and physical and mental readiness.

**Evaluation:** Evaluating students' academic work and activities is a sensitive and vital component of mobile learning. This evaluation is carried out using various methods and tools, making it flexible, engaging, easy, and based on practical exercises.

**Peer Groups:** In mobile learning, the relationship among peer students is maintained through various social media applications. Peer students engage in discussions, question and answer sessions, and mutual guidance and support.

#### **Advantages of Mobile Learning**

- **Accessibility:** Mobile learning is accessible anytime, anywhere, allowing for learning at any time of day or night.
- **Overcoming Geographical Barriers:** Mobile learning eliminates geographical barriers, benefiting students in remote areas.
- **Beneficial for Rural Areas:** It is advantageous for rural areas with a shortage of educational institutions.
- **Inclusive Learning:** Students with different mental abilities or deficiencies can easily acquire knowledge.
- **Cost-Effective and Engaging:** Mobile learning is economical and engaging.
- **Reliable and Acceptable:** It is reliable and acceptable for students in today's digital age.
- **Individualized Learning:** Mobile learning is based on individual factors.
- **Cost-Efficient and Trial-Based:** It is low-cost and based on trial and error.

#### **Disadvantages of Mobile Learning**

- **Poor Mobile Network:** Learning can be difficult due to poor mobile network connectivity.



- **Small Screen Size:** The small screen size of mobile devices can make it difficult to understand content and can strain the eyes.
- **Limited Memory:** Mobile devices have limited memory, making it challenging to store information and data.
- **Distractions:** Mobile devices are used for multiple purposes, which can interrupt the learning process.

### Check Your Progress

1. List the key components of mobile learning.
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## 15.7 Learning Outcomes

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After studying this Unit, you should have learned the following points:

- **Education:** Education is a process that reflects the quality, civilization, and culture of a nation, along with its values, customs, and philosophies.
- **Types of Education:** Education can be categorized as formal education, non-formal education, and informal education.
- **E-Learning:** In e-learning, various media such as audio, video, animation, avatars, simulation, lab support, tutorials, and trial and error are used to enhance students' interest and participation, strengthening their learning experiences.
- **Web-Based Learning:** Web-based learning is defined as the learning process facilitated by the World Wide Web.
- **Mobile Learning:** Mobile learning refers to the learning process supported by mobile devices. Students use different applications on their mobile devices to learn from the available content.

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## 15.8 Glossary

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**Learning:** The process of acquiring knowledge or skills, reflected in changes in behavior and habits.

**Electronic Devices:** Devices that operate using electric current.

**Websites:** A means of accessing the internet, connected through hyperlinked web pages.

**COVID-19:** A pandemic that originated in China and spread worldwide.

**E-Content:** Digital content accessible through computers and the internet.

**E-Library:** A library that can be accessed via the internet.

**E-Tutorials:** Online instructional lectures.

**E-Laboratory:** An online laboratory for conducting science projects.

**E-Assessment:** Online evaluation and measurement.

**E-Open Educational Resources:** Online teaching materials and resources.

**Zoom Meeting, Google Meet, etc.:** Platforms for online conferencing.

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## 15.9 Unit End Exercises

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### Objective Questions

1. The current use of e-learning is for?
  - a) Cities
  - b) Villages
  - c) A specific plan
  - d) Accessing education anytime, anywhere
2. WWW stands for?
  - a) World Wide Web
  - b) Web Web Web
  - c) World Water Web
  - d) None of the above
3. E-learning helps in online learning for?
  - a) Only teachers
  - b) Only students
  - c) Only working professionals
  - d) Everyone
4. To use the internet, you need?
  - a) MS Office
  - b) PDF
  - c) Browser

- d) None of the above
5. In mobile learning, which is not used?
- a) Multimedia
  - b) Internet
  - c) LMS
  - d) Chalk and duster

### **Short Answer Questions**

1. Introduce the online resources used in e-learning.
2. Discuss how web-based learning is a useful tool for today's education.
3. Introduce the necessary tools for mobile learning and explain their importance.
4. How can we overcome the barriers to using e-learning?
5. How can online courses be made popular in Indian society?

### **Long Answer Questions**

1. Explain the importance of online courses in the context of the Indian environment.
2. What is web-based learning? How can we implement it in schools?

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## **15.10 Suggested Learning Resources**

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1. [https://docs.moodle.org/400/en/About\\_Moodle](https://docs.moodle.org/400/en/About_Moodle)
2. Ansari, T. A. (2018). "Taleem me maloomati w tarsili technology ka istemal": Vol. I, 2018th, ISBN-978-93-85295-87-4, Published by Noor Publication, New Delhi. India.
3. Ansari, T. A. (2019). Uses of ICT in Teaching learning and Education: Vol. I, 2019th, ISBN-93-87635-74-0, Funded by, NCPUL, MHRD, Published by Arshia Publication, New Delhi. India.
4. Web Based Learning <https://www.igi-global.com/dICTIONary/web-based-learning/32418>

## **Unit 16: Massive Open Online Courses (MOOCs)**

### **Structure**

**16.0** Introduction

**16.1** Objectives

**16.2** Massive Open Online Courses (MOOCs)

**16.2.1** Historical Background

**16.2.2** Concept of MOOCs

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**16.3** SWAYAM in India

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**16.6** Learning Outcomes

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**16.8** Unit End Exercises

**16.9** Suggested Learning Resources

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### **16.0 Introduction**

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The internet plays a significant role in disseminating knowledge to every corner of the world. It has impacted almost every aspect of human life. The internet has transformed education, healthcare, business, media, agriculture, entertainment, banking, commerce, the economy, and virtually every other sector of human life. Humanity enjoys the limitless benefits of the internet. The internet has many features, such as being accessible at any time, from any place, and by anyone. One of the main features of the internet is openness. It has opened the doors of education and development to everyone, regardless of religion, race, region, color, or class, promoting the concept of 'open education' worldwide.

The term 'open' in open education refers to removing all kinds of barriers to education and opening the doors of knowledge to everyone. Throughout its history, open education has been associated with free access to education and educational resources, free technological resources, flexibility in teaching and learning, equality, inclusion of the underprivileged, cooperation among institutions located in different geographical regions, democratic education, social equity, transparency in administration, and removing socio-economic barriers to education. Open education has promoted openness in terms of locations, methods, theories, resources, services, and technology in education globally.

The roots of this movement can be traced back to the 17th-century Czech philosopher John Comenius. Over time, many universities, NGOs, non-profit organizations, media platforms, and institutions around the world have promoted this movement, which has expanded globally in a very short time. Technological advancements in information and communication technology have further elevated this movement.

Many terms are associated with open education, such as Open University (OU), Open Courseware Programs (OCP), Massive Open Online Courses (MOOCs), Open Educational Resources (OER), Open Books, Open and Distance Learning (ODL), Open Access (OA), Open Source (OS), Open Content (OC), Creative Commons (CC), and Copyleft, etc.

In this unit, we will study MOOCs in terms of their concept, importance, global trends and practices, particularly focusing on Indian platforms like SWAYAM, and the benefits and drawbacks of MOOCs in education.

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## 16.1 Objectives

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At the end of this Unit, students will be able to:

- explain the concept of MOOCs
- clarify various technical terms related to MOOCs
- highlight the importance of higher education in the current era
- explain the global trends and practices of MOOCs
- describe the role of SWAYAM platform in MOOCs in India
- critically appraise the global trends and practices of MOOCs

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## 16.2 Massive Open Online Courses (MOOCs)

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### 16.2.1 Historical Background

The term MOOCs was first coined by Dave Cormier in 2008 at the University of Prince Edward Island, Canada, for an online course titled 'Connectivism and Connective Knowledge.' The course was designed by George Siemens of Athabasca University and Stephen Downes of the National Research Council of Canada. The course had 25 paying students from the university and 2,300 non-paying students who participated. It utilized learning management systems (LMS), blog posts, and real-time online meetings for collaboration.

In 2011, the Massachusetts Institute of Technology (MIT) initiated the first major collection of MOOCs under the name 'Open Courseware.' In 2012, MIT and Harvard University supported the growth of MOOCs by founding EdX. In 2013, the term 'MOOCs' was added to the Oxford Dictionary. Over time, numerous e-learning platforms emerged, such as Khan Academy, Coursera, Udemy, and edX, offering MOOCs.

Today, universities and colleges worldwide offer MOOCs, enabling millions to access education for free. SWAYAM, launched by the Indian government in 2017, is a domestic platform offering hundreds of MOOC programs, ranging from high school to higher education.

### 16.2.2 Concept

After a brief historical background, let's understand the concept of MOOCs. MOOC stands for Massive Open Online Course, and it encompasses the following four concepts:

- **M:** Massive - These courses are designed to accommodate a large number of participants, ranging from hundreds to thousands.
- **O:** Open - Anyone can enroll, and there are no specific entry requirements. It's open to all.
- **O:** Online - These courses are delivered via the internet.
- **C:** Course - The purpose is to teach a specific subject.

Let us delve into some definitions of MOOCs:

1. **MOOCs** are free web-based distance education programs designed for a large number of participants spread geographically. (Chai & Wigmore, 2021)
2. **MOOCs** are online courses aimed at unlimited participation and open access via the web. (Wikipedia, 2022)

3. **MOOCs** are open, massive web-based courses designed and provided by accredited higher education institutions and organizations, accessible to anyone with a smart device and internet connection, regardless of age, gender, geographical location, or educational background. (Deng, et al., 2019)
4. **MOOCs** are online learning environments that allow learners to take courses on a wide variety of subjects with minimal financial burden and without the requirements for entry. (Jung & Lee, 2018)
5. **MOOCs** represent an instructional perspective that generally allows millions of individuals worldwide access to online courses for free. (Weinhardt & Sitzmann, 2019)
6. **MOOCs** are online learning environments accessible over the internet without the requirements of entry. Consequently, MOOCs are available free of charge to learners, and there are no limitations on the number of participants. (Castano-Munoz, et al., 2018)

MOOCs are online courses that provide education without any restrictions of time, place, or formal admission process. MOOCs typically consist of e-content, pre-recorded video lectures, self-assessment exercises, forums for interaction with instructors and fellow students, and many other learning resources.

MOOCs, or Massive Open Online Courses, are a type of online educational programs, as you have excellently explained, which hold significance in various ways. Let me briefly summarize their characteristics and delve deeper into their importance.

### **16.2.3 Characteristics of MOOCs**

- These courses are free.
- They can accommodate an unlimited number of participants.
- They are available on IT platforms accessible online.
- There are no prerequisites or formal entry requirements.
- Some platforms may charge a fee for certification upon completion of the course.

### **16.2.4 Types of MOOCs**

- **vMOOCs (Task-based):** These MOOCs are task-based, requiring completion of a series of tasks to acquire skills. The 'v' in vMOOCs stands for "Vocational" as they are used for vocational training, often involving simulations and related technologies.

- **xMOOCs (Content-based):** This type of MOOCs is content-based and is more popular. They apply the principles of objectivity in educational models, aiming to acquire skills through content.
- **cMOOCs (Network-based):** These MOOCs are network-based, utilizing the principles of connectivism, such as expansiveness, diversity, autonomy, and interaction. Their primary objective is to promote communication, social learning, and exposure to the environments of fellow learners.

### 16.2.5 Importance and Advantages of MOOCs in Higher Education

- **No Physical Dependence:** MOOCs allow access from anywhere and anytime via digital devices as long as there is an internet connection, eliminating physical dependence.
- **Improving Access to Higher Education:** Through technology, MOOCs provide access to higher education for millions of people, transforming lives and enhancing their quality.
- **Providing Affordable Alternative:** As the cost of formal education rises, MOOCs offer free or low-cost access to complete learning experiences. Even certification, if needed, is relatively affordable.
- **Based on Constructive Approach:** MOOCs are based on constructive learning, not only providing learning materials but also fostering collaboration, relationships, and networking opportunities.
- **Lack of Entry Requirements:** Regardless of age, background, or location, anyone interested in a subject can take admission to a MOOC and access the course.
- **High-Quality Resources:** MOOCs are guided by experts in specific fields, and assistance is provided through assistant teachers to ensure access to top-tier educational resources.
- **Feasibility:** MOOCs facilitate self-paced and flexible learning, making it feasible for busy learners to study at their own pace and convenience.

MOOCs play a significant role in democratizing education, breaking barriers, and providing opportunities for lifelong learning and skill acquisition. They contribute to a more accessible, affordable, and flexible educational landscape, empowering learners worldwide.

**Multimedia Experience:** MOOCs provide students with text, audio, video, and other multimedia experiences to cater to the diverse learning needs of all kinds of learners.



- **Self-paced but Supported Learning:** MOOCs empower students to work at their own pace through course materials and assessments while also providing opportunities to engage with the global community of learners.
- **Repetition:** To ensure that students do not miss out on opportunities, MOOCs often run their programs multiple times a year.
- **Global Exposure:** Through MOOCs, students gain exposure to interactions with international learners and access to courses from foreign universities, thus gaining global recognition and exposure.

### 16.2.6 Disadvantages of MOOCs

Several disadvantages have been identified with MOOCs, including:

- Dependency on ICT and the internet.
- The entire responsibility lies on the students, and students may not be motivated to prefer MOOCs without any form of investment or interest, leading to slower enrollment and completion rates.
- Lack of direct interaction between students and instructors.
- Lack of personal attention from instructors.
- Focused on subject acquisition.
- Lack of a reliable system for authorization, approval, and reward.
- Challenges for disabled students in accessing MOOCs.
- Poor internet connection can hinder access to MOOCs.
- Language barriers can arise during MOOCs presentation.

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## 16.3 SWAYAM in India

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SWAYAM is an Indian MOOCs platform, meaning "self" in Sanskrit, which signifies the principles of self-learning. Launched on July 9, 2017, by the Indian Ministry of Education under the "Digital India" initiative, SWAYAM aims to provide free entry from school to postgraduate levels by incorporating modern education and training. This platform was developed with the help of Microsoft by the All India Council for Technical Education (AICTE). It provides free access to all courses from grade 9 to post-graduation. SWAYAM boasts 203 participating institutions, 8,082 completed courses, 279,567,91 enrolled students, 2,206,713 exam registrations, and 1,177,076 successful certificates.

**National Coordinators of SWAYAM:** SWAYAM has 9 national coordinators who ensure the enhancement and provision of standardized materials for all subjects and levels of education. The details of these national coordinating agencies are as follows:

Sr. No	Name of the National Coordinator	Area	Courses completed
1	AICTE (All India Council for Technical Education)	Self-paced and international courses	286
2	NPTEL (National Programme on Technology Enhanced Learning)	Engineering	4813
3	UGC (University Grants Commission)	Non-technical post-graduation education	263
4	CEC (Consortium for Educational Communication)	Under-graduate education	1116
5	NCERT (National Council of Educational Research and Training)	School education	201
6	NIOS (National Institute of Open Schooling)	School education	343
7	IGNOU (Indira Gandhi National Open University)	Out-of-school students	700
8	IIMB (Indian Institute of Management, Bangalore)	Management studies	203
9	NITTTR (National Institute of Technical Teachers Training and Research)	Teacher Training programmes	153

**Activity:**

Visit the SWAYAM website at <https://SWAYAM.gov.in>.

Compile a list of 5 courses prepared by each national coordinator of SWAYAM.

**Four Quadrant Approach:**

The SWAYAM platform follows a special e-learning system of MOOCs known as the Four Quadrant Approach. Let's try to understand the components of this perspective:

- **Quadrant I (e-Tutorial):** It includes organized forms of video and audio lectures, animations, simulations, video demonstrations, and more.
- **Quadrant II (e-Content):** It comprises text, PDFs, e-books, illustrations, documents, and self-learning textual material. This quadrant also includes related study materials

such as links to online open-source resources, case studies, reference books, research papers, journals, anecdotal information, historical development of the subject, articles, etc.

- **Quadrant III (Self-assessment):** It incorporates multiple-choice questions, short-answer questions, long-answer questions, quizzes, assignments, and explanations of common misconceptions.
- **Quadrant IV (Discussion Forum):** This is a discussion forum comprised of sessions where students can interact with instructors and fellow coursemates on various issues related to the subject, clarifying their doubts and queries.

#### **Credit Transfer:**

All courses offered by SWAYAM are recognized by the Government of India, making all courses offered by SWAYAM platform valid throughout the country. The University Grants Commission (UGC) announced the 'Credit Framework for Online Learning Courses through SWAYAM Regulations, 2021,' defining credit transfer for SWAYAM courses.

According to these regulations, top educational institutions can grant up to 40% of total credits for courses on the SWAYAM platform. These higher education institutions will award equivalent credit weightage to students for credits obtained through SWAYAM courses. No university can refuse credit transfer for SWAYAM courses to any student. In short, SWAYAM courses are recognized across India, and credits obtained through SWAYAM courses can be transferred to your traditional educational courses.

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## **16.4 Global Trends and Practices of MOOCs**

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Massive Open Online Courses (MOOCs) are providing accessible and cost-effective learning opportunities for students worldwide. MOOCs are offered by top educational institutions, universities, commercial companies, non-profit organizations, government agencies, and non-governmental organizations.

Websites or platforms that gather and display information about MOOCs are known as MOOC Aggregators. Some MOOC aggregators are commercial (such as Alison), while others are non-profit (such as Khan Academy). Some MOOCs charge fees for access and certification (such as The Great Courses), while some only charge fees for certification and provide free access to materials (such as FutureLearn), and some provide free access to both materials and

certification (such as Kadenze). Some aggregators offer programs in regional languages to fulfill the needs of various regions within a country.

Some aggregators have dedicated themselves to a specific level of education. For example, Wondrium offers college-level audio and video courses. However, most aggregators offer courses ranging from school-level education to university-level courses. Additionally, most aggregators categorize their courses based on the level of education, subjects, skills, and more.

While the offerings and designs of all aggregators differ from one another, they all typically provide e-content, e-tutorials, discussion forums, reference materials, videos, worksheets, and interactive services or platforms.

Below is a list of 20 popular and international MOOC aggregators.

<b>Sr. No</b>	<b>MOOC Aggregator</b>	<b>Country</b>	<b>Website</b>	<b>Year of Launch</b>
1	Khan Academy	United States of America	<a href="https://www.khanacademy.org/">https://www.khanacademy.org/</a>	2006
2	Alison	Ireland	<a href="https://alison.com/">https://alison.com/</a>	2007
3	OpenClassrooms	France	<a href="https://openclassrooms.com/en/">https://openclassrooms.com/en/</a>	2007
4	Udemy	United States of America	<a href="https://www.udemy.com/">https://www.udemy.com/</a>	2010
5	Coursera	United States of America	<a href="https://www.coursera.org/">https://www.coursera.org/</a>	2012
6	edX	United States of America	<a href="https://www.edx.org/">https://www.edx.org/</a>	2012
7	FutureLearn	United Kingdom	<a href="https://www.futurelearn.com/">https://www.futurelearn.com/</a>	2012
8	Udacity	United States of America	<a href="https://www.udacity.com/">https://www.udacity.com/</a>	2012
9	OpenHPI	Germany	<a href="https://open.hpi.de/">https://open.hpi.de/</a>	2012
10	MOOC.fi	Finland	<a href="https://www.mooc.fi/en/">https://www.mooc.fi/en/</a>	2012
11	OpenLearning	Australia	<a href="https://www.openlearning.com">https://www.openlearning.com</a>	2013
12	Iversity	European Union	<a href="https://iversity.org/">https://iversity.org/</a>	2013
13	JMOOC	Japan	<a href="https://www.jmooc.jp/en/">https://www.jmooc.jp/en/</a>	2014
14	Kadenze	United States of America	<a href="https://www.kadenze.com/">https://www.kadenze.com/</a>	2015
15	Open Education	Russia	<a href="https://openedu.ru/">https://openedu.ru/</a>	2015
16	K-MOOC	South Korea	<a href="http://www.kmooc.kr/">http://www.kmooc.kr/</a>	2015
17	EduOpen	Italy	<a href="https://learn.eduopen.org/">https://learn.eduopen.org/</a>	2016
18	Thai MOOC	Thailand	<a href="https://thaimooc.org/">https://thaimooc.org/</a>	2017
19	Campus-il	Israel	<a href="https://campus.gov.il/">https://campus.gov.il/</a>	2018

20	Chinese University MOOC	China	<a href="https://www.icourse163.org/">https://www.icourse163.org/</a>	2020
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**Activity:**

Go to any three websites of MOOC aggregators and note down your observations on the resources provided in the course, modules, certifications, and technical support.

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## **16.5 Critical Appraisal of MOOCs in Higher Education**

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In education, every system or reform comes with its own benefits and drawbacks. It requires assessment considering its nature. MOOCs have been providing open access to education for almost 15-20 years and have established their presence worldwide in a short period. MOOCs are an important aspect of open education. They have several other aspects, such as open educational resources, open textbooks, Creative Commons, copy-free movement, open access, etc. However, MOOCs are playing a significant role in providing high-quality educational material prepared by the best universities in the world for free. In this regard, MOOCs are democratizing education internationally (Bates, 2015).

Hollands and Tirthali (2014) of Columbia University's Teachers College found in a research study that MOOCs are providing educational opportunities to millions of people worldwide. However, most MOOC participants are already well-educated and employed, and only a moderate number of them fully engage with these courses. Overall, evidence suggests that MOOCs have not been entirely successful in democratizing education at present, and it may also be possible that currently, instead of reducing the gap in access to education, MOOCs are increasing it. Thus, MOOCs, as is common in many forms of ongoing university education, address the needs of better-educated, elderly, and employed individuals in society. Ho et al. (2014) have identified several shortcomings in MOOCedX programs at various levels in their research study. In their research study, they found that 35% of students never accessed course materials, 56% of students accessed only half of the materials, 4% of students accessed more than half of the materials, and only 5% of students completed the course and obtained certification. This indicates a very low pass-out ratio for MOOCs courses. Many research studies have been conducted on MOOCs, revealing positive and negative results regarding student

interest, interaction with students of different age groups, student issues, student outcomes, and many other positive and negative aspects of MOOCs.

Furthermore, there are many challenges in front of MOOCs to solve issues such as cultural diversity, learning disabilities, development of learning materials in regional languages, local support, cost of course organization, commercial and free access to education, copyright issues, etc. MOOCs will continue to improve themselves over time and will overcome obstacles and challenges in providing free and open access to education worldwide through further research and innovations.

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## 16.6 Learning Outcomes

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After studying this Unit, you should have learned the following:

- The term MOOCs was coined by Dave Cormier in 2008 at the University of Prince Edward Island, Canada. Cormier used this term for an online course, 'Connectivism and Connective Knowledge,' presented by the University of Manitoba.
- In 2011, the Massachusetts Institute of Technology (MIT) launched the first major collection of MOOCs under the name 'Open Courseware.'
- In 2012, MIT and Harvard University supported the promotion of MOOCs by launching EdX.
- In 2013, the word 'MOOCs' was added to the Oxford DICTIONARY.
- SWAYAM is a national platform initiated by the Ministry of Education, Government of India, in 2017 to achieve the three basic principles of educational policy: accessibility, equality, and quality.
- The word 'SWAYAM' in Sanskrit means 'self,' which indicates the principle of self-learning.
- SWAYAM was launched on July 9, 2017, under the 'Digital India' initiative of the Government of India. Its objective is to provide free admission to all courses from grade 9 to post-graduation.
- This platform has 203 participating institutions, 8,082 completed courses, 279,56,791 enrolled students, 2,206,713 exam registrations, and 1177076 successful certificates.
- There are nine national coordinators for SWAYAM to ensure the development and provision of the best quality materials at all levels and fields of education.

- There are many challenges in front of MOOCs to solve issues such as cultural diversity, learning disabilities, development of learning materials in regional languages, local support, cost of course organization, commercial and free access to education, copyright issues, etc.
- MOOCs continue to improve themselves over time and are working to overcome obstacles and challenges in providing free and open access to education worldwide through further research and innovations.

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## 16.7 Glossary

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**Open Education:** Open education refers to removing all barriers to education and opening the doors of knowledge to every individual in the world.

**MOOCs:** MOOCs are online courses that provide education to unlimited individuals at any time, anywhere, and without the need for any formal procedures.

**vMOOCs:** These are a series of MOOCs that are used to acquire skills, hence they are task-based.

**xMOOCs:** This type of MOOCs is network-based. The letter 'c' stands for 'Connectivism' because it uses the principles of concretization, such as expansiveness, diversity, autonomy, interaction, etc. Its primary purpose is to promote exposure to networks, socially organized knowledge, and the environment of peers, leaving aside content and skills.

**MOOC Aggregator:** A website or platform that collects and displays information about MOOCs is known as a MOOC Aggregator.

**Four Quadrant Approach:** This is a system of presenting course materials in four modules. It includes content, tutorials, self-assessment, web references, etc.

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## 16.8 Unit End Exercises

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### Objective Questions

1. Who coined the term 'MOOC'? (a) Dave Cormier (b) Bill Gates (c) Elon Musk (d) Prince Edward
2. In which year was the term 'MOOC' first used? (a) 1998 (b) 2008 (c) 2018 (d) 2012

3. \_\_\_\_\_ added the term 'MOOC' to its dICTIONary in 2013. (a) Cambridge dICTIONary (b) Oxford dICTIONary (c) Webster dICTIONary (d) Collins dICTIONary
4. Khan Academy is the MOOC Aggregator of \_\_\_\_\_. (a) Pakistan (b) Afghanistan (c) USA (d) UK
5. SWAYAM was launched in \_\_\_\_\_. (a) 2007 (b) 2008 (c) 2017 (d) 2018

### Short Answer Questions

1. Define MOOCs in your own words.
2. List the benefits of MOOCs.
3. Discuss the drawbacks of MOOCs.
4. Explain the Four Quadrant Approach of SWAYAM.
5. Discuss the types of MOOCs.

### Long Answer Questions

1. Discuss in detail the significance of SWAYAM in providing free access to higher education.
2. How do you understand MOOCs? Explain the Four Quadrant Approach to creating MOOCs.
3. Take a critical appraisal of MOOCs in higher education.

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## 16.9 Suggested Learning Resources

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**MODEL QUESTION PAPER**

ایم۔ اے۔ (جیزک الیکٹیو پیپر)

**4<sup>th</sup> Sem Examination 2023**

پرچہ: تدریس و اکتساب

**Paper: Teaching and Learning (PGED201GET)**

**Time: 3 hours**

**Max. Marks: 70**

**Instructions:** This paper consists of three sections: Part 1, Part 2, Part 3. Each question has a specified word limit. Answers to all sections are mandatory.

1. **Part 1** contains **10** compulsory questions, which are objective questions. Each question must be answered. Each question carries 1 mark. (10 x 1 = 10 Marks)
2. **Part 2** contains **8** questions, out of which the student has to **answer any 5** questions. Each answer should be approximately 200 words long. Each question carries 6 marks. (5 x 6 = 30 Marks)
3. **Part 3** contains **5** questions, out of which the student has to **answer any 3** questions. Each answer should be approximately 500 words long. Each question carries 10 marks. (3 x 10 = 30 Marks)

**Part-1**

**Question: (1)**

1. Which type of teaching is not considered from an organizational perspective?  
(a) Laissez-faire (b) Authoritative teaching (c) Democratic (d) Non-traditional education
2. Which of the following is not a teaching style?  
(a) Democratic (b) Autocratic (c) Cooperative (d) Advisory
3. When did Bloom first propose the classification of educational objectives?  
(a) 1956 (b) 1966 (c) 1957 (d) 2001
4. What is the primary objective of professional teaching?  
(a) To provide students with knowledge and skills (b) To earn income (c) For long summer vacations (d) For personal satisfaction
5. Which of the following is an example of formal professional advancement for teachers?  
(a) Attending conferences (b) Reading educational books (c) Engaging in personal photography (d) Networking with colleagues
6. An individual's intelligence is part of his \_\_\_\_\_.  
(a) Inheritance (b) Effort (c) Education (d) Environment
7. "Learning is the process by which a person accepts adaptable behaviors." Whose quote is this?  
(a) Woodworth (b) Skinner (c) Jones (d) Gates and others

8. Which factor is not included in the factors affecting the effectiveness of teaching from the methodological aspect?  
(a) Methodicalness of teaching (b) Teaching aids and techniques (c) Level of teacher's knowledge (d) Practice and application
9. The Law of Effect belongs to which theory?  
(a) Theory of Pavlovian Conditioning (b) Trial and Error (c) Wai Gotski's Theory (d) None of these
10. Which duo is credited with presenting the personal approach to teaching?  
(a) Keller and Sherman (b) Alport and Mead (c) Dewey and Patrick (d) Skinner and Bruner

### **Part-2**

2. Describe the important characteristics of teaching.
3. What objectives does a teacher achieve in the classroom, and how are these objectives established?
4. List the factors that influence the professional development of a teacher.
5. Explain the classification of Bloom's three domains.
6. Explain the central idea of the Theory of Acquisition.
7. What do you understand from the Acquisition Curve? Explain.
8. Describe the characteristics of a visual learner.
9. Write a definition of Andragogy.
10. Part 3
11. Shed light on the role of government and non-governmental institutions in promoting the professional development of teachers.
12. Explain the concept of Insightful Learning Theory and its application in the classroom.
13. What challenges do students with lower mental abilities face in acquisition?
14. What are the different levels of learning? Provide detailed explanations for each level.
15. Clarify the concept of acquisition methods through Coffield's framework and list the classification of acquisition methods explained through it.

# Maulana Azad National Urdu University

Generic Elective (All P.G. Programme) Semester Examination, August 2021

Paper - PGED201GET : Teaching and Learning

پرچہ: تدریس و اکتساب

Time : 3 hrs

Marks : 70

ہدایات:

- یہ پرچہ سوالات دو حصوں پر مشتمل ہے: حصہ اول اور حصہ دوم۔ ہر جواب کے لیے لفظوں کی تعداد اشارہ ہے۔ تمام حصوں سے سوالوں کا جواب دینا لازمی ہے۔
1. حصہ اول میں 10 سوالات ہیں، اس میں سے طالب علم کو کوئی 08 سوالوں کے جواب دینے ہیں۔ ہر سوال کا جواب تقریباً سو (100) لفظوں پر مشتمل ہے ہر سوال کے لیے 05 نمبرات مختص ہیں۔  
(8 x 5 = 40 Marks)
  2. حصہ دوم میں 05 سوالات ہیں۔ اس میں سے طالب علم کو کوئی 03 سوال کا جواب دینا ہے۔ سوال کا جواب تقریباً ڈھائی سو (250) لفظوں پر مشتمل ہے۔ سوال کے لیے 10 نمبرات مختص ہیں۔  
(10x3 = 30 Marks)

## حصہ اول

1. تدریسی مہارتوں (Teaching Skills) کو بیان کیجیے۔
2. تدریسی اصول (Principles of Teaching) کے کوئی چار نکات مع مثال بیان کیجیے۔
3. تدریسی مراحل (Phases of Teaching) کی وضاحت کریں۔
4. انداز تدریس (Teaching Style) پر مختصر نوٹ لکھیے۔
5. اکتساب (Learning) سے کیا مراد ہے؟ اس کو اثر انداز کرنے والے عوامل کو مختصر بیان کیجیے۔
6. اکتسابی خط منحنی (Learning Curve) کی وضاحت کیجیے۔
7. لیکچر طریقہ (Lecture Method) پر مختصر نوٹ لکھیے۔
8. تصوراتی خاکہ (Concept Map) سے کیا مراد ہے؟ ایک مثال کے ذریعہ سمجھائیے۔
9. موکس (MOOCs) کی تعلیم میں کیا اہمیت ہے؟ بیان کیجیے۔
10. "e-Learning" اور "Web-based Learning" پر نوٹ لکھیے۔

## حصہ دوم

11. معلم کے پیشہ وارانہ فروغ (Professional Development) کو متاثر کرنے والے عوامل پر تفصیلی نوٹ لکھیے۔
12. ایک معلم کے لیے طلباء میں پائے جانے والے "انفرادی فرق" (Individual Differences) کی معلومات کیوں لازمی ہے؟ تفصیل سے لکھیے۔
13. درس و تدریس میں اکتسابی اسلوب (Learning Style) کی اہمیت کو واضح کیجیے۔
14. درس و تدریس میں اکتسابی اسلوب (Behaviouristic Approach) اور رفتی طرز برائے اکتساب (Cognitive Approach) کا تقابلی جائزہ لیجیے۔
15. ICT سے کیا مراد ہے؟ تعلیم میں ICT کے استعمالات پر روشنی ڈالیے۔ انتظامیہ، جانچ، ریسرچ اور درس و اکتسابی عمل میں اس کی اہمیت کو واضح کیجیے۔