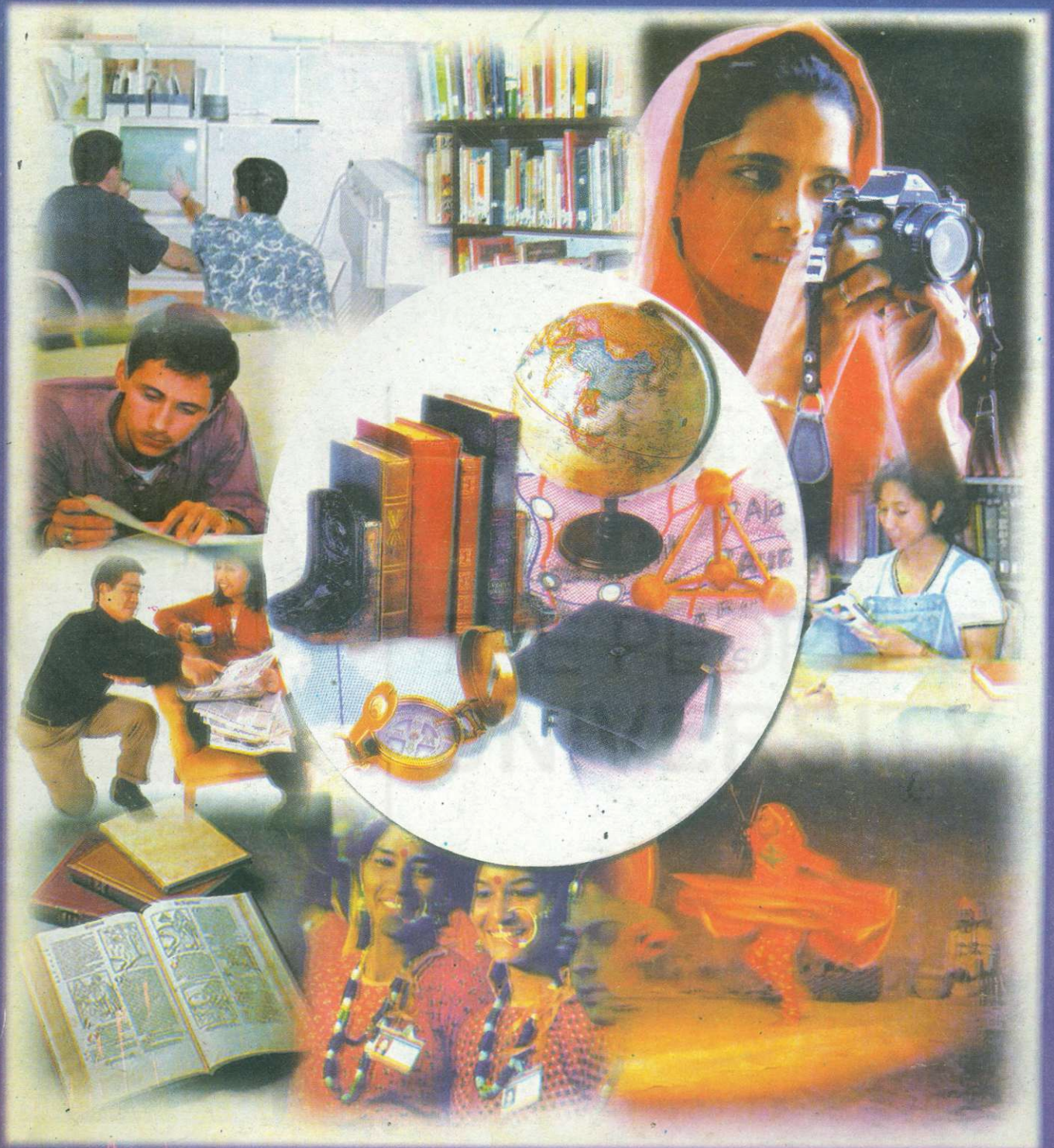




Indira Gandhi National Open University
School of Education

MES-103

Higher Education : The Psycho-social Context



Towards Understanding the Processes of
Teaching and Learning in Higher Education

3

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

— इन्दिरा गांधी



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

— Indira Gandhi



MES-103

Higher Education : The Psycho-social Context

Block

3

Towards Understanding the Processes of Teaching and Learning in Higher Education

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MES-103 Higher Education : The Psycho-social Context

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-

Block 3 Towards Understanding the Processes of Teaching and Learning in Higher Education

Introduction to the Block

This block focuses on the most significant dimension of student life-learning. It aims at giving educators a comprehensive understanding of the concept and process of learning. The idea is to provide a rich theoretical base from which several important implications can be derived and practiced. Thus questions like how students learn, what methods of teaching should one use, why so many variations in students' learning patterns exist, what are the best forms of stimulation, what factors actually influence the learning process etc., will all be answered in this block.

Unit 9 presents the concept of learning differentiating it from related concepts like maturation, reflex actions, imprinting etc. It also carries an elaborate discussion of the factors affecting learning both in the personal domain and environmental domain.

Unit 10 focuses on approaches to learning in an evolutionary perspective. The salient features of each approach are presented along with their implications for the teaching-learning process.

Unit 11 deals exclusively with the Special learner. In the contemporary ethos, recognition of the special learner and making adequate arrangements to deal with him/her in the mainstream system, has been advocated. This unit enables you to achieve this.

Unit 12 presents the models of teaching and some contemporary strategies which are of relevance in higher education. Here, the attempt is to equip you (as teachers) with a variety of ways in which you can strategize and mediate your interaction with your students.

THE PEOPLE'S
UNIVERSITY

HOW STUDENTS LEARN?

CAN I MAKE MY TEACHING MORE EFFECTIVE?

HOW SHOULD I DEAL WITH STUDENT DIVERSITIES?

WHAT ARE THE FACTORS THAT INFLUENCE MY STUDENTS' LEARNING?

I WOULD LIKE TO BE AN IDEAL FOR MY STUDENTS!



Learning : Concept, Nature and Factors Influencing it

9

Introduction

From childhood through adolescence to adulthood, you must have perceived many changes in yourself. Your skills, abilities and attitudes must have particularly undergone changes. Have you ever wondered how this has been possible? Well, many psychologists have focused their research on finding the answer to this question and attributed it to the phenomenon of **learning**. In this unit you will study how learning actually contributes to the development of our 'self' and 'personality', you will be able to understand its nature and concept, appreciate how it unfolds as a developmental process and perceive how it differs from related concepts like maturation, reflex action, imprinting and performance. An attempt will also be made to facilitate your comprehension of the various types of learning and the personal and environmental factors which influence it. Their implications for the teaching – learning process will also be discussed.

Learning outcomes

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

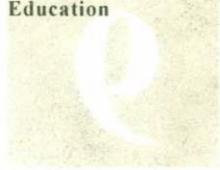
- conceptualize and understand the concept of learning;
- differentiate it from maturation, reflex action, instinctive behaviour and performance;
- understand and explain the various types of learning;
- identify and analyse the different factors affecting learning.

Concept of learning

In order to better understand the concept of learning, let us look at these examples given below:

- An individual feels anxious when he sees a doctor with a needle and syringe.
- Most of us can cook, ride a bicycle, swim, play tennis or badminton.
- Long after learning mathematics in school, as adults we can make budgets with ease.
- Based on the physics which we learnt as children we can regulate the consumption of electricity in our homes.
- When we see a visually challenged person trying to cross the road, we immediately go to help him.

The examples clearly show us that ever since our birth we have been continually learning **new skills, gaining fresh information and developing beliefs and attitudes**. We were unable to perform most of our present behavior when we were young. We have learnt these behaviors en route to growth and they have now become a part of our personality. Most of the behaviors that we manifest are a result of learning. Learning begins at infancy and continues throughout life. A newborn who first cries when uncomfortable, learns that crying would soon be followed by his/her mother's care and attention. The child learns from his family, neighborhood, teachers, peers, etc. In this



way **learning continues** under **formal** as well as **informal** conditions. An individual acquires knowledge, beliefs, attitudes skills etc. from his family, school, community and society at large and develops into **a unique self**. All these learnt behaviors become a part of our personality. We are not only acculturated and socialized but we also become capable of enriching our culture. **Learning** is a **complex mix** of **intelligence, motivation, psychological factors** and even **brain chemistry**. Its processes and consequences can be as simple as touching a hot store and 'learning' not to touch it again, or as complex as struggling to understand the basic principles of the theory of relativity and its application to the space technology programme. Learning is a **process** of **continual adaptation** to the **environment** and **assimilation** and **accommodation** of **new information** and **knowledge** to fit in with **pre-existing knowledge structures**.

Although there is no single definition of learning, most psychologists and educators would agree that learning is a process by which **behavior** is either **modified** or **changed** through **experience or training**. Learning is thus a relatively **permanent change** in **response potentiality** which occurs as a function of reinforced practice. This definition also allows the inclusion of the phenomenon of **latent learning** and **incidental learning**, in which changes are not immediately observable and reflects the truism that learning is really a hypothetical construct recognizable solely through measurable changes in behavior i.e. performance. Learning may thus be understood as essentially an **active process** which allows the individual to **interact with the environment** and gain **enrichment of experience**. It can also be defined as improvement in behavior, in that with time we usually become more proficient at whatever it is that we are learning.

Learning involves various dimensions of **psychological** and **mental** activities. For **effective learning** to take place, among various psychological factors, **motivation** and **learning ability** are important factors besides psychological factors, there are **physiological basis** of learning too. Since organisms participate in activities which ensure learning on an operational basis, there are many physical planes through which an organism operates. In the physical plane, learning is highly dependent upon the receptors, the participation of afferent nerves which carry the sense impressions and to the brain and the entire nervous system which then provides meaning and interpretation.

Learning also includes **motor processes, habits, ideational acquisitions** which involve information and **affective elements** that are emotional in content. For instance, manual skills which are predominantly motor in character are relatively simpler to acquire. On the affective side, however we have a broad array of acquired likes, dislikes, biases and prejudices. At a still higher level of complexity, there are **value systems, frames of reference** and **styles of life** - all learnt and acquired through a rewarding interaction with the environment, constantly indulging in modification and structuring and restructuring behavior to help us adjust and adapt to our surroundings and obtain mastery over it. Effective learning, like growth, expands the possibilities of adaptive behavior.

Learning typically includes a wide variety of changes in behavior. It may involve adjustment with others or it may involve learning the use of skills required for the day-to-day activities or inculcation of healthy habits for survival. It may also help in fostering the right attitude or in controlling one's emotions. From the political party that we vote for, to taking stock of our thoughts, to the vocabulary we use, are all the by-products of learning. This makes it most significantly relevant process for an individual's positive growth and adjustment with his environment.

Difference between learning and related concepts

From what has been discussed so far, it is evident that learning is change in behaviour. But, can all changes in behaviour attributed to learning? For instance, accidentally stepping on a sharp object leads to a quick withdrawal of the foot. Is this quick withdrawal of the foot - a learned behaviour? No, this behaviour is spontaneous, automatic - it is **reflexive**

and not a behavioural change due to learning, but an **instinctive** reaction. So also, closing one's eyes when out in a dust storm or in sharp sunlight occur automatically. These are examples of 'reflex actions'.

The behavioral of pattern an individual depends upon his biological constitution. Also, what he is capable of learning is determined by his biological make-up. Living beings inherit a few fixed patterns of (behaviour) responses. For example, soon after birth, the duckling follows its mother - a process called **imprinting**. This is not a learnt behaviour since ducklings don't have any such prior experience. This behaviour is encoded in their genetic material and they have a natural instinct to perform this behaviour. Thus this behaviour is actually **instinctive behaviour**. You must have observed that all the birds do not necessarily know / follow this behaviours thereby indicating that certain behaviour are found only in certain species:- they are **species-specific** behaviour. Similarly, there are certain phylogenetic functions i.e. responses informally found in a given species. These responses are common to a race. For example flying in birds and crawling, walking in human beings. These behaviours appear normally, at about the same time and in the same order in spite of differences in environmental stimulation. These behaviors are largely due to physical development or **maturation** and less due to learning. Maturation is a developmental process, within which a person from time to time manifests different traits for which the **blue prints** have been carried in his cells from the time of his conception. At a particular age, every normal child starts crawling, walking or talking. He doesn't have to put in much conscious effort to learn these behavior as compared to learning how to swim or ride a bicycle. Thus maturation is a process of growth and development which takes place regularly in the individual without special conditions of stimulation such as training and practice. Learning, in contrast, is change of behavior which is brought about by the stimulation present in the environment, outside the individual and involves training and practice. It is an **enduring change** in a living individual which is not heralded by his genetic inheritance. It always refers to some systematic change in behavior or behavioural disposition that occurs as a consequence of experience in some specified situation. It therefore excludes purely physical processes like growth and the behavior changes that occur with maturation. Although much learning occurs in tandem with growth, any changes in behavior or in brain structure or functioning that come about purely due to biological maturation are not considered to be learning. Changes which take place in connection with growth, development and maturation stimulate learning and influence the form it will take, but they are not the same as learning itself.

It is also important to differentiate between learning and reflex action. A **reflex action** is an unlearned stimulus response relationship. This must be clear from the examples about withdrawing one's foot and closing the eyes which have already been discussed. Reflex actions are **natural** reactions in us which enable us to deal with any anomalies or dangers which 'hreaten our physical sense of well being. They enable an individual to defend himself. Later on many reflex actions become learnt behaviors and are also generalized to different situations.

There are many behavior changes brought about by factor like fatigue, drugs, illness or emotional situations which are purely transitory in nature and cannot be equated with learning. These changes, like physical changes in material objects are quite unstable. As and when the factor causing a change is removed or restored, the behavior may revert to its original form. For example, if you are tired one evening, your capacity to study will be low. The next day however, if there is no evidence of fatigue, you will be able to study well. Similarly, if you have a headache or are feeling dizzy, you will not be able to concentrate on what you are trying to read. As you get better however, you will find that you can read with full concentration.

Learning must also be differentiated from **performance**. Performance refers to what an organism actually does i.e. its behavior which can always be observed and even measured. Learning however is not behavior or performance since it specifies what the

organism is capable of doing while performance specifies what the organism actually does. Learning can never be studied directly. We can only make theoretical inferences about learning based on performance. Everything we learn is retained in some form in our behavior, even though it may be forgotten or never acted out (exceptions are brain injury etc.). The absence of a particular behavior or its non-performance does not mean that an individual has unlearned it.

The relationship between learning and performance may be illustrated as follows:

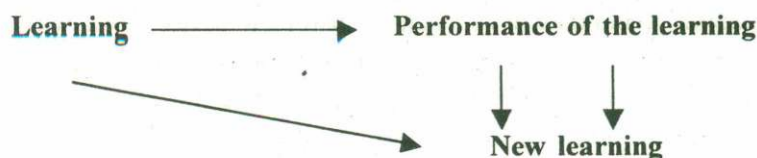


Figure 1 Relationship between learning and performance

Self-assessment

1. Give two examples each to show how learning differs from maturation and reflex actions.
2. Reflect back on your life and identify at least five capabilities in yourself which you can attribute to maturation. State why they qualify as exemplars of maturation and not learning.
3. Make a list of at least three behaviors which were initially instinctive or reflex actions in you, but later became learnt behaviors.

Types of learning

You have already understood that we learn a wide variety of skills, attitudes and competencies, which greatly enhance our efficiency and our effectiveness in our environment. Some of these are learnt directly, some indirectly, some through experience, some through conscious effort, some through using thinking and reasoning and others through our feelings. Some skills are also learnt through optimizing on our neuromuscular abilities and co-ordination. Let us take a look at some of the different types of learning which we engage in.

Cognitive learning

When learning refers to gaining of information, memorization, ability to perceive relationships between different ideas, explaining phenomena in different ways etc., this type of learning refers to **cognitive learning** or **intellectual learning**. It covers most of what is taught in the school and college. This does not however mean that cognitive learning takes place under formal conditions only. Even while doing routine work or household work we discover so many things. In the beginning we imitate our elders, while learning new tasks. We tend to do the routine work the way they do it without even trying to reason it out. Gradually, as we gain more and more insight and understanding of the whole process, we are able to comprehend why certain work is done in a particular manner. Many a times, we may even suggest new or better methods of doing those very tasks. We usually try out those methods and evaluate them. Cognitive learning enables us to function at high levels of complexity and efficiency. In the life of college students, cognitive learning occupies a centre-stage position.

Psychomotor learning

Riding a bicycle, stitching, playing badminton etc are examples of learning which involve **muscular co-ordination** and **physical skills**, like eye hand co-ordination while hitting a

ball, or a shuttle cock. Learning of skills that have large physical or motor components is referred to as **psychomotor** learning. 'Gross motor skills' include balance, left versus right directionality, and general co-ordination. 'Fine motor skills' are specific and differentiated physical skills like eye hand co-ordination required for writing or stitching and doing precision skills.

Affective learning

Fear, love, passion and dislikes illustrate learning involving **emotions** and **feelings**. This type of learning is called **Affective** learning. Affective learning is largely an outcome of the socio-cultural and emotional atmosphere surrounding us. We learn both positive and negative emotions. The situation and circumstances usually determine how we feel and what emotion gets learnt by us.

Concomitant learning

Very often, one learns **unconsciously** from his environment certain attitudes, values, likes, dislikes, for some people or things. Children acquire values, attitudes and sentiments from the behaviour of their parents and other members of the family. If the mother is soft spoken, loving, kind and just, the child is likely to imbibe these values. Similarly, if the father is well mannered, honest, diligent, helpful, children will unconsciously learn these behaviours. Many of the mannerisms of a person are a result of the unconscious learning. Students learn a great deal of behaviour unconsciously. Though the primary concern of a teacher is to teach subject matter and students consciously learns it, unconsciously they pick up values, attitudes etc. from their teachers' behaviour as well. Learning of this kind is known as **collateral** or **concomitant** learning. Behaviour related to moral values, nationalism, truthfulness etc., are largely an outcome of concomitant learning. Concomitant learning plays a very important role in personality development.

Discrimination learning

Gagne, put discrimination learning just before concept learning in his hierarchical classification of types of learning. In the learning of concepts, the focus is on one new concept at a time, while in the learning of discriminations, the focus is on two or more similar or related concepts to finely outline the differences. If the concepts have been learnt already, **comparison** and **discrimination** can follow easily. Each of the similar or related concepts for discrimination could be taken one by one, developed and generalised, then considered side by side with the others through comparison and differentiation. Thus, the process of discrimination learning is essentially that of concept learning. Generalisation of each concept is attained through **attribute analysis, selection, and comparison** with a set of **appropriate exemplars**. Discrimination is attained through comparison of such sets for different, similar or related concepts. In this process the vital differences are also generalised.

Principles learning

Principles learning, yet another type of learning is similar to concept learning. While exemplars are used in the latter, situations containing **relationships**, are used in the former. While common features are identified and generalized in the latter, **common relationships** are **noted** and **generalised** in the former. Further, verification and confirmation are not only useful, but also necessary, in both. Just as sub-concepts may be put together or synthesized into a **complex concept**, simple principles can be interrelated and integrated to yield higher order principles. Concepts, specially the defined concepts, have implications for behaviour, action and practice. Principles too, have implications for such things. Further, principles have applicability and are used in problem solving, and have a scope for transfer to parallel situations. Once principles or rules are adequately understood, it should be possible to derive their implications and applications, and use them deductively in solving problems involving concepts and relationships, represented in the principles concerned.

Self-assessment

Identify the type of learning involved in the following activities:

4. Changing one's tone of voice when talking to persons of different age groups.

.....

5. Attending a yoga class and learning how to perform asanas.

.....

6. Doing badly in a math exam because of math anxiety.

.....

7. Selecting cotton garments over silk ones in summer.

.....

Factors affecting learning

Having understood the concept of learning and the different types of learning, let us now try to see why individuals differ with respect to what they learn, how they learn and why they learn. Study the examples given below and try to see which factor(s) are influencing learning.

- Charu, an average student gets good marks in English and Hindi but always scores poorly in math. Her parents and teachers feel that somehow she is not working hard enough in math.
- Ravi has planned out a regular routine for his studies, play, watching T.V. etc. covering the whole day. He sticks to his schedule and thus scores very well.
- Sangita is a very autocratic and cynical teacher. She is very impatient with her learners and treats them badly, while Rohita another teacher, who teaches the same class, is considerate and kind, respects her learners and helps each student to develop to his/her best. Students enjoy Rohita's classes and do much better in her subject.

The above given real life situations must have enabled you to understand some of the factors which affect learning, like aptitude, positive experiences, good study habits, personality traits, etc. As has already been discussed in the previous chapters, most of the behaviors that we show today are actually manifestations of our learning. Often we learn by interacting with different environments thereby making the **environment** as important a factor as the **individual** dealing with the environment.

In this conceptualization, we may describe learning as :

Learning : f (Environment x Learner)

In other words, learning is influenced by both **personal** and **environmental** factors.

Learner related factors are personal factors which differ from person to person and learner to learner. The important personal factors will now be discussed, one by one.

Maturation

A one year old cannot be made to write and a three months old child cannot walk. Unless the learner has 'matured' optimally, he cannot learn. In order for learning to take place,

physical, intellectual, socio-emotional maturation is most essential. Today, in our ever-advancing society, we burden our students with too many things, without giving credence to their level of maturation. Also individual variations in the process of maturation should be acknowledged and appropriately dealt with. For instance, puberty may begin as early as ten years for some girls but for others it may not happen till they are fourteen or fifteen. For some boys, height gain happens in class IX, for others in class XI. In the case of college students in their readiness for fulfilling the various developmental challenges confronting them, which had been discussed elaborately in unit one, maturation plays a role.

Motivation

Ashok, is very fond of playing cricket and he is very good at it too. He is the captain of his college team. He spends long hours playing or watching cricket and never gets tired or bored. We may say that he is intrinsically motivated i.e. he derives **internal satisfaction** from the game. Intrinsic motivation is closely related to one's need for self fulfillment, and achievement. These needs impel us to become better by learning more, interacting with our environment and developing our self. Learning is most effective when there is **intrinsic** motivation – a desire to learn from within, which finds satisfaction in the achievement itself and does not bother about other factors. In young adults, this is a more potent force than motivation based on rewards that are **extrinsic**.

When the desire to learn is governed by **external factors**, like earning a reward or avoiding pain (for eg., you take a new job because it pays more), it is only a means to an end and therefore, not as effective as that which sustains from internal joy. However, it may be emphasized here that in the case of college students, extrinsic motivation also plays a significant role in giving strength and direction to learning. For example, the desire for winning a prestigious trophy for dramatics or art, often induce students to work very hard and strive to obtain success. In such cases, the social prestige that results from winning the trophy is also considered important, apart from inner happiness that may be experienced.

In the field of studies too, the same pattern can be observed. In fact, sometimes students are motivated by a **combination** of both **intrinsic** and **extrinsic motivation**, since both provide energy, recognition and satisfaction. Studying hard for the joy it gives and so that one will get a university position of merit is a typical example of this.

Psychological needs

Very closely related to our motivational pattern, are our psychological needs. These exist in the form of certain **wants** or **desires** that are **unique** to us. They are important, since they influence what we **want to learn** and how much **time, energy** and **effort** we are willing to devote to it. At any given point of time, there are a large number of psychological needs in us. In young adults, these include, love, belongingness, social prestige, esteem, recognition, affiliation, self-expression, creativity, aesthetics, and higher cognitive quests. Although all these needs co-exist simultaneously, there is always a dominant pattern or preponderance of some over the other. The dominant needs at any given point of time will determine what the individual is likely to learn and do. For example, if a student enjoys science and spends all her time and energy on it, you can be sure that she has a strong higher cognitive need for it. Maybe it is also giving her a sense of creative fulfillment and is an outlet for self-exploration and expression. For the student talented in art, painting becomes a means of self expression, creativity and an avenue for the fulfillment of beauty and aesthetic needs. For the President of the Students Union, the need for esteem, social, prestige and recognition may be the predominant needs. Analysing your students' needs, may thus be a very worthwhile pursuit, for it will provide many explanations about the learning processes and quality which they reflect.

Self-concept

As individual's grow and develop, they pick up ideas about themselves – their talents, potentialities, weaknesses and strengths. This network of ideas about oneself formulates what is known as our **self-concept**. Self-concept is a very important issue, since our behavior, choices, interpersonal relationships and world view are affected by it and that is why it is occurring again in almost all the units. An individual's beliefs about himself always colour his actions. For example, a student who likes mathematics, feels confident about it (**positive self-concept**) will learn faster, seeks opportunities for doing it, and tries to excel in it furthermore. On the contrary, tries a student who dislikes math, will try to avoid it, and may eventually end up hating it and performing poorly in the subject (**negative self-concept**). Self-concept is very important in matters of learning because it influences individual differences in learners, in their, learning orientations, cognitive styles and the self learning strategies which they use.

In young adults, self-concept is influenced by **self image**, **self esteem** and the specific worth which they assign to themselves in different areas like academics, sports, public speaking, friendship, etc. Those individuals who are high on their academic self-concept usually tend to study very hard, assigning a lot of importance to their performance and achievement. For those whose self image derives its strength from public speaking skills, participation in debates, dramatics and discussion forums becomes a passion and vice versa. Thus self-concept becomes an important personal factor that influences the course and intensity of learning and involvement. A strong positive self-concept almost always induces effective learning whereas a weak self-concept or a poor self-image lead to ineffective learning. To promote the development of a healthy self-concept in students, it is important that they have success experiences and positive associations with what they are learning. The relationship between self-concept, learning and performance is diagrammatically presented in the figure given below:

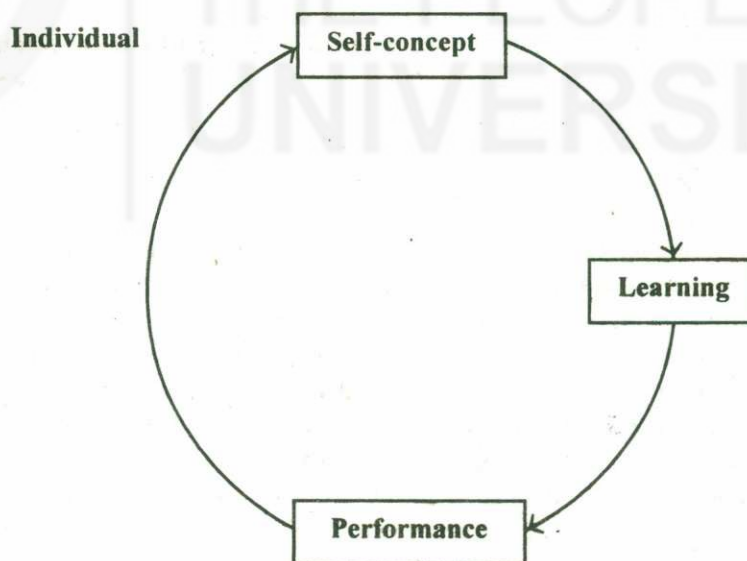


Figure 2 Relationship between self-concept, learning and performance

Level of aspiration

This refers to the **extent** to which an individual wishes to strive to achieve. It emanates from the targets, goals and ambitions that individuals construct for themselves. If we set our level of aspiration fairly high, then correspondingly, the degree of effort we put in and how effectively we are likely to learn, will be influenced by it. An individual who

wants to excel in a particular field would have a high level of aspiration in it and would thus try to learn effectively to fulfill his aspiration. You must have come across many students wanting to excel in studies, games, etc. and noticed how they set targets for themselves and then work towards the fulfillment of those targets.

Goals

Our goals, whether short term or long term, determine what we learn and how we learn it. For example, to pass a test in history, one may rote memorise the facts as an immediate short term goal, but to pursue history as an academician, one may need to carefully study the facts and analyze them – a long term goal. Goals, motives, needs and aspirations are all highly inter-related and connected. Goals in a sense provide the **anchor** for the **expected outcome**, while needs, motives and aspirations energise the process of their formulation. If one wants to become a doctor, for example, then studying medicine would be his/her goal, wanting to study in a good medical college would be his/her aspiration and serving others might be his/her motive. Some goals which individuals set up for themselves may often be very **abstract** and **esoteric** such as wanting to be a good human being, an enlightened citizen, etc. In such a case, an almost lifelong learning process is set off. Trying to understand an individual's goals is thus of immense relevance in making sense of the nature and quality of his/her learning.

Interests

Interests are a major factor in guiding learning. The more interested one is in a particular area, the more he is motivated to learn in that area. You must have come across some learners, who are very average in their studies, but can nevertheless present a very complex analysis of a cricket match. They even substantiate their views with precise facts and details. They also enjoy hearing and watching panel discussions and interviews centred around cricket. Have you, ever wondered, why this happens? Well, it is mainly because they have a great deal of interest in cricket. Interests are activities or pastimes which we **voluntarily engage** in, because we enjoy them. The enjoyment derived from them gives us a sense of fulfillment. The areas of interest among young adults may vary from academics, to sports, to literary, to cultural, to recreational activities. Avid chess players are found to be deeply interested in the game. Voracious readers usually have strong literary and academic interests. Individuals who enjoy watching films, dance, plays etc. are likely to be high on cultural interests. It is thus very important to know the **pattern of interests** which individuals have for, it is a rich source of knowing them and understanding the nature of their learning.

Study and work habits

Study and work habits determine to a very large extent, how effective, learning would be. Proper organization of the material to be learnt, judiciously timed breaks between learning, careful analysis and planning of the content to be learned and preparing a time table are some of the facilitative work habits which bring about efficiency in our performance and make us better learners. Also using appropriate learning strategies to study such as rhymes, mnemonics, short forms, **anagrams** flow charts, highlighting, underlining, note making, etc. greatly effectivise learning.

Study the figure given below. You will realize that learning is influenced not only by personal or learner related factors, as has been already discussed, but is also contingent upon teacher-related, task-related and environment-related factors.

Learner Related	Teacher Related	Task Related	Environment Related
Maturation (Readiness to learn)	Teacher's Personality	Methods used	Physical environment (climate/comfort)
Motivation	Communication	Nature of Task	Socio-emotional climate of the class
Self-concept	Leadership Style of teacher	Teaching aids used	
Goals		Structure of the discipline	
Levels of Aspiration	Interpersonal relationships of the teacher with the learners.		
Interests	Teaching styles		
Attention			
Study habits			

Figure 3 Factors affecting learning

Let us now examine them one by one.

Teacher-related factors

You already know that these factors have been dealt with in Block II. In any learning situation, the role of the teacher is extremely significant. The **leadership style** adopted by him/her in terms of whether it is authoritarian, democratic, benevolent or indifferent greatly influences how the students will respond and involve themselves in the learning tasks. The **freedom** to communicate, express one's views, explore alternatives and engage in productive discussions also has a great bearing on the **classroom processes** and **learning outcomes**. The **relationship** which teachers have with their students also sets the tone and climate of the classroom. When students perceive the relationship as **open, friendly** and **facilitative**, they feel more comfortable and better motivated to learn. In controlled, hierarchical relations, an element of fear is usually induced which demotivates learners. In such, situations learning is based on the '**avoidance of unpleasantness**' principle, rather than learning out of a sense of joyful exploration or inquiry orientation. The **evaluative comments** which teachers make either verbally or in writing also have a great bearing on students learning. They have a power to **motivate** and **encourage** or **stifle** and **discourage**. They carry signals and messages of learners' capabilities and can serve as a great source of inspiration and challenge on the one hand, but complete disinterest on the other.

Very closely allied to the feedback provided by teachers, is their **expectations from students** related to learning. There is nothing mystical about how a teacher's expectations work. If students strive to live up to teachers' expectations, it will be not only because the expectations are reasonable, but because an interpersonal relationship in which teachers are viewed as persons who are basically trustworthy, friendly, warm and sure of themselves. **Expectations** are powerful, self-perpetuating attitudes for students as well as teachers because they guide both perceptions and behavior. When we expect that something will happen in a particular way the likelihood of that 'something' happening is far greater than if we didn't have such an expectation.

Apart from expectations, there are many other characteristics related to teachers which influence their learners and the teaching – learning process. The most significant among these are **modelling, enthusiasm, caring** and **positive expectations**. Teachers attitudes and beliefs about teaching and learning are communicated through modelling.

Student motivation and learning are virtually impossible if teachers model distaste or lack of interest in the topics they teach. In contrast, even the most mundane topics can be made more palatable, if teachers' model interest in them. Further, the enthusiasm of a teacher communicates genuine interest. Research indicates that teachers who present information enthusiastically, increase learners' **self-efficacy, attributions of effort and ability, self confidence** and **achievement**. The **caring attitude** of a teacher and how he/she communicates it, is another important factor, Caring refers to a teacher's ability to empathize with and **invest** in the **protection** and **development** of her learners. Caring may be communicated through showing respect and politeness, valuing individuality ability, helping with personal problems and giving extra time.

As far as **positive teacher expectations** are concerned, they are important in that they communicate that all students can **learn to their fullest potential**.

Let us now understand briefly, the task-related factors.

Task-related factors

These refer largely to the transactional skills and abilities of the teacher. It is well known that students of any age are liable to lose motivation and interest in learning when meaning, purpose and hope are absent from a curriculum and its transactional process. It is in this that the skills and task interpretation of a teacher are most important. Just as a fine cook can create a hunger in us that we did not know existed, so, is it possible for teachers to create a **hunger** in their students to **learn, discover, solve problems** and use all their cognitive capabilities. One way of doing this is to help students to see the **linkages** between academic learning and real world implications emanating from them. They have also to be shown ways of **transferring their learning** from one subject to another and from one context to another. Further, if teaching is related to students' backgrounds and experiences and the approach is to **demystify** the content and facilitate its comprehension rather than mastery, then the task can become much more meaningful challenging and enjoyable. From motivational theory, we also know that learners must **expect to succeed** and must believe that what they are learning is important and valuable. **Challenge** helps to promote a sense of value. Value is also enhanced when students understand both **what** they are supposed to be learning and **why** they are learning it. This is called **task comprehension**. As part of effective transaction, the **introductory focus, personal meaningfulness** of what is being taught, **involvement** of students in the lesson build up, tapping their **repertoire of cognitive abilities** and giving **constructive feedback** are all very crucial.

Environment related factors

Among the significant environment related factors which affect learning are the **physical environment** and the **ethos** or **socio-emotional climate** of the classroom. These have already been discussed elaborately in Block II in all the units addressing issues in classroom management.

To reiterate the important issues, the **climate** of a classroom refers to the **prevailing influence of psychological conditions** that characterize the overall interpersonal feeling tones existing within it. A teacher's **leadership style** has a strong impact on shaping the personality of a classroom. Research indicates that classroom climate affects not only **how much** is learned, but **how much future** learning there is likely to be. Students are usually most receptive to and **productive in classrooms** in which they feel they can influence decision – making and operating policies.

Positive climate teachers tend to be good listeners, good empathizers, high rewarders, fair evaluators and are generous with positive feedback to all students.

How students and teachers feel about each other and how students handle their peer relations are important factors in shaping a classroom's teaching-learning environment.

Self-assessment

8. *Reflect on your own learning experiences since childhood and identify the factors which influenced your learning.*
9. *Interview the students in your class who you feel are underachieving. Investigate the causes leading to poor learning and underachievement in them. Think of ways, (based on your understanding of the factors affecting learning) of helping them.*
10. *Draw up a vision plan of an ideal classroom in your view. Which factors would you keep in mind while embarking on this task?*
11. *Develop check lists of all the teaching methods which you could use for your learners in different subject areas. Transact your classes based on these and obtain feedback from your students.*

Summary

In this unit you read about the concept of learning, types of learning and the different factors which influence it. You must have understood that learning is a change in our repertoire of concepts, ideas, skills and attitudes based on the exposure, practices and experiences which we have. This learning occurs in several domains like affective learning, cognitive learning, psychomotor learning, concept learning, principles' learning, etc. Whatever we learn increases our efficiency and adaptability to the environment, provided that it has been learned effectively. Learning is not to be confused with instincts, reflex actions, maturation or imprinting since it is distinct from them. It is something which is acquired. We learn consciously and unconsciously. What we learn, why we learn and how well we learn are influenced by a number of factors. These include learner centred factors like motivation, needs, self concept, interests, goals, level of aspiration etc., teacher and task related factors such as teaching style, classroom ethos, transactional skills and methodology etc. and environmental factors such as the physical and psychological structures in which learning occurs.

Unit-end exercises

1. Explain the concept of learning with the help of suitable examples.
2. Among the different types of learning, which one/s have dominated your life, and why?
3. Differentiate learning from all its related concepts by giving examples and analysing them.
4. All learning can be explained with reference to the nature of the learner and the context in which he/she lives. Discuss.
5. A healthy classroom environment promotes effective learning. Discuss the role of the teacher in this regard.

Suggested readings

Edgeman Paul and Kauchak Dan (1999) *Educational Psychology*, New Jersey: Prentice Hall.

Hamachek Don (1990) *Psychology in Teaching, Learning and Growth*, Boston: Allyn and Bacon.

Woolfolk, Anita (2001) *Educational Psychology*, Boston: Allyn and Bacon.

Yelon R. and Weinstein (1978) *A Teacher's World*, New York: McGraw Hill.

Approaches to Learning

Introduction

Examine the list of behaviours given below:

- A student wishes her teacher each time she sees him.
- A five year old child when playing with his dolls, behaves exactly like her mother does with her.
- 'Homely' a characteristic that means being plain looking in European culture signifies a good and caring person in Indian culture.
- Reena, immediately offers her seat in the bus to an old woman whom she sees standing.
- Long after a class VII student has learnt multiplication tables, he realizes that he can actually derive the tables by simple methods.

You must have realized that these are some examples of every day behaviours which you observe. However, they are important, as learning is inherent in each of them. How this learning occurs, what mediates it, and what constitute its basic elements have been explained differently by various researchers and theorists. Let us try to see what they have to say.

Learning outcome

After reading through this unit, you will be able to:

- understand the concept of learning;
- appreciate the different approaches to learning and explain them;
- evaluate the learning theories with reference to how they explain the phenomenon of learning;
- understand the educational implications of the approaches to learning.

Approaches to learning

You must have noticed in the examples given to you in the introduction, that we learn many things and the basis on which we learn seems to be very diverse. Somewhere the experience is important, at other places the motivation, the rewards and the consequences of what we do make the difference. Sometimes we process what we see cognitively and enhance our understanding of it. There are also occasions when some need or desire in us determines what we will learn and focus on. These variations in fact form the core of the approaches to learning. Each approach gives its own interpretation of the process of learning. Let us now try to understand them one by one.

In this section you will be exposed to six important approaches to learning. The salient features of each approach with illustrative examples will be discussed in the hope that from the insights which you get, you will develop a more informed understanding of how persons, especially your students, learn.

The six approaches discussed are:

- Classical conditioning
- Operant conditioning
- Social learning
- Information processing
- Constructivist approach
- Humanistic approach

Classical conditioning

Classical conditioning focuses on the **learning of involuntary emotional or physiological responses** such as fear, increased heartbeat, salivation, or sweating, which are sometimes called 'respondents' because they are automatic responses to stimuli. Through the process of classical conditioning, humans and animals can be **trained to react involuntarily to a stimulus that previously had no impact on them** or had a very different effect. The stimulus comes to **elicit** or bring forth the responses automatically.

Classical conditioning was discovered by Ivan Pavlov, a Russian physiologist in 1920. In his laboratory, Pavlov was plagued by a series of setbacks in experiments on the digestive system of dogs. He was trying to determine how long it took a dog to secrete digestive juices after it had been fed, but the intervals of time kept changing. At first, the dogs salivated in the expected manner while they were being fed. Then the dogs began to salivate as soon as they saw the food. Finally, they salivated as soon as they saw the scientist enter the room. The white coats of the experimenters and the sound of their footsteps all started salivation. Pavlov decided to make a detour from his original experiments and examine these unexpected interferences in his work.

In one of his first experiments, Pavlov began by sounding a tuning fork and recording a dog's response. As expected, there was no salivation. At this point, the sound of the tuning fork was a neutral stimulus because it brought forth no salivation. Then Pavlov fed the dog. The response was salivation. The food was an **unconditioned stimulus (US)** because no prior training or **conditioning** was needed to establish the natural connection between food and salivation. The salivation was an **unconditioned response (UR)**, again because it occurred automatically- no conditioning was required.

Using these three elements- the food, the salivation, and the tuning fork- Pavlov demonstrated that a dog could be **conditioned** to salivation after hearing the tuning fork. He did this by contiguous pairing of the sound with food. At the beginning of the experiment, he sounded the fork and then quickly fed the dog. After Pavlov repeated this several times, the dog began to salivate after hearing the sound but before receiving the food. Now the sound had become a **conditioned stimulus (CS)** that could bring forth salivation by itself. The response of salivating after the tone was now a **conditioned response (CR)**.

Pavlov's work also identified three other processes in classical conditioning: **generalization**, **discrimination**, and **extinction**. After the dogs learned to salivate in response to hearing one particular sound, they would also salivate after hearing similar tones that were slightly higher or lower. This process is called **generalisation** because the conditioned response of salivating generalized or occurred in the presence of similar stimuli. Pavlov could also teach the dogs **discrimination** - to respond to one tone, but not to others that are similar- by making sure that food always followed only one tone, not any others. **Extinction** occurs when a conditioned stimulus (a particular tone is presented repeatedly but is not followed by the unconditioned stimulus (food)). The conditioned response (salivating) gradually fades away and finally is "extinguished"- it disappears altogether.

Pavlov's findings and those of other researchers who have studied classical conditioning have implications for all of us, especially teachers. It is possible that many of our **emotional reactions** to various situations are learned in part through **classical conditioning**. For example, Renu's trembling hands when she saw her college supervisor might be traced to previous unpleasant experiences. Perhaps she had been embarrassed during past evaluations of her performance, and now just the thought of being observed elicits a pounding heart and sweaty palms. We must remember that emotions and attitudes as well as facts and ideas are learned in classrooms. This **emotional learning** can sometimes interfere with academic learning. Procedures based on classical conditioning can also be used to help people learn more adaptive emotional responses, as shown in the figure.

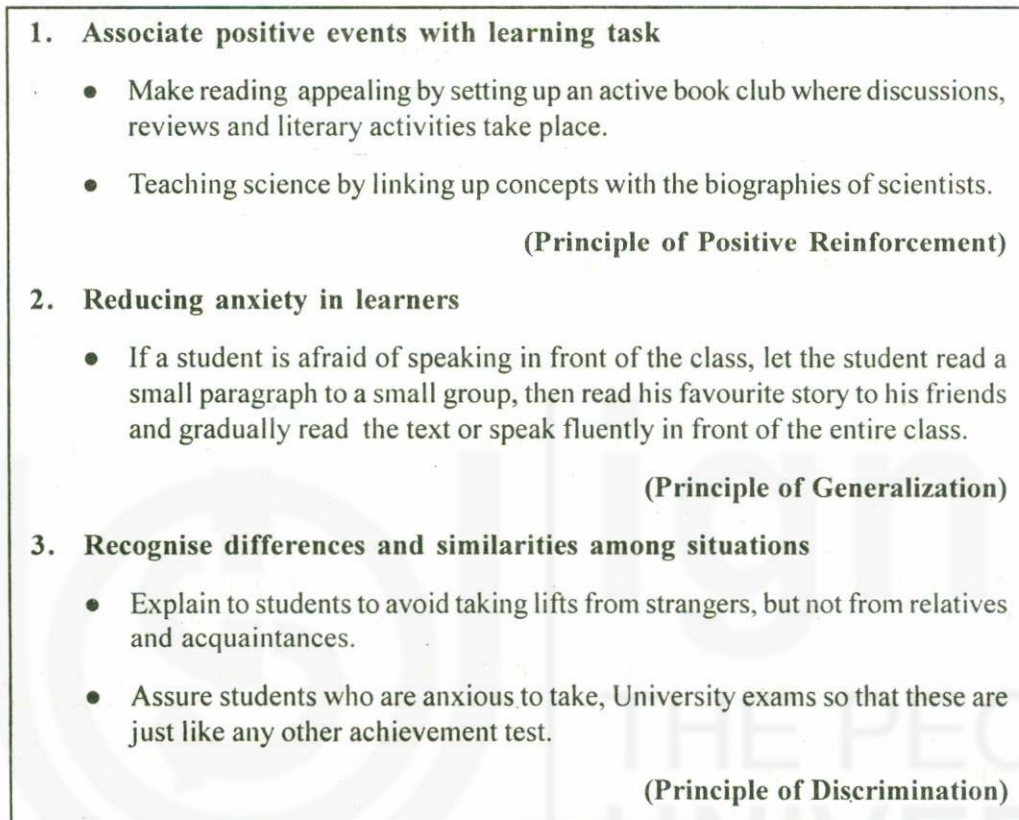


Figure 1 Using principles of classical conditioning for effective adjustment and adaptation in classroom situations

Operant conditioning

So far we have concentrated on the automatic conditioning of involuntary responses such as salivation and fear. Clearly, not all human learning is so automatic and unintentional. Most behaviours are not **elicited** by stimuli, they are **emitted** or voluntarily enacted. People actively **operate** on their **environment** to produce different kinds of consequences. These deliberate actions are called **operants**. The learning process involved in operant behaviour is called **operant conditioning** because we learn to behave in certain ways as we operate on the environment.

Thorndike established the basis for operant conditioning, but the person generally thought to be responsible for developing the concept is B.F. Skinner (1953). Skinner began with the belief that the principles of classical conditioning account for only a small portion of learned behaviour. Many human behaviours are operants, not respondents. Classical conditioning describes only how existing behaviours might be paired with new stimuli; it does not explain how new operant behaviours are acquired.

Behaviour, like response or action, is simply a word for what a person does in a particular situation. Conceptually, we may think of a behaviour as sandwiched between two sets of environmental influences: those that precede it, **antecedents**, and those that follow it **consequences**. This relationship can be shown very simply as **Antecedent-Behaviour-**

Consequence or A-B-C. As behaviour is ongoing, a given consequence becomes an antecedent for the next ABC sequence. Research in operant conditioning shows that operant behaviour can be altered by changes in the antecedents, the consequences, or both. Early work focused on consequences, often using rats or pigeons as subjects.

According to the operant conditioning view, consequences determine to a great extent whether a person will **repeat** the behaviour that led to the consequences. The **type** and **timing** of consequences can **strengthen** or **weaken** behaviours. We will look first at consequences that strengthen behaviour which is called reinforcement. Reinforcement is commonly understood to mean **reward**, this term has a particular meaning in psychology. A **reinforcer** is any consequence that strengthens the behaviour it follows. So, by definition, reinforced behaviours **increase in frequency** or **duration**. Whenever you see a behaviour persisting or increasing over time, you can assume the consequences of that behaviour are reinforcing for the individual involved. The reinforcement process can be diagrammatically be presented as follows:

CONSEQUENCE

EFFECT

Behaviour → Reinforcer → Strengthened or repeated behaviour

We can be fairly certain that food will be a reinforcer for a hungry animal, but what about people? It is not clear why an event acts as a reinforcer for an individual, but there are many theories about why reinforcement works. For example, some psychologists suggest that reinforcers satisfy needs, while other psychologists believe that reinforcers reduce tension or stimulate a part of the brain (Recline, 1991.) Whether the consequences of any action are reinforcing probably depends on the **individual's perception** of the event and the **meaning** it holds for her or him. For example, students who repeatedly get themselves sent to the principal's office for misbehaving may be indicating that something about this consequence is reinforcing for them, even if it doesn't seem desirable to you.

Reinforcers are those consequences that **strengthen** the associated behaviour (Skinner, 1952,1989). There are two types of reinforcement. The first called **positive reinforcement**, occurs when a behaviour produces a new response. Examples include wearing a new outfit receiving many compliments, or falling out of your chair producing cheers and laughter from classmates, or giving a good answer in class and receiving compliments for it.

You will notice that positive reinforcement can occur even when the behaviour being reinforced (falling out of a chair) is not 'positive' from the teacher's point of view. In fact, positive reinforcement of inappropriate behaviours occurs unintentionally in many classrooms. Teachers help maintain problem behaviours by inadvertently reinforcing them. For example, a student who doesn't like math is asked to leave the class when found misbehaving / disturbing others.

When the consequence that strengthens a behaviour leads to the **appearance** or **addition** of a new stimulus, the situation is defined as positive reinforcement. In contrast, when the consequence that strengthens a behaviour is marked by the **disappearance/subtraction** of a stimulus, the process is called **negative reinforcement**. If a particular action leads to stopping, avoiding, or escaping an aversive situation, the action is likely to be repeated in a similar situation. Consider students who continually "get sick" right before a test and are sent to the sick room. The behaviour allows the students to escape aversive situations- tests- so getting "sick" is being maintained, in part, through negative reinforcement. It is negative because the stimulus (the test) disappears; it is reinforcement because the behaviour that caused the stimulus to disappear (getting 'sick') increases or repeats itself. It is also possible that classical conditioning plays a role. The students may have been conditioned to experience unpleasant physiological reactions to tests.

The 'negative' in negative reinforcement does not imply that the behaviour being reinforced is necessarily negative. The point is to induce threat to strengthen positive behavior.

Negative reinforcement is often confused with **punishment**. The process of reinforcement (positive or negative) always involves strengthening behaviour. **Punishment**, on the other hand, involves **decreasing** or **suppressing behaviour**. A behaviour followed by a 'punisher' is less likely to be repeated. Again, it is the effect that defines a consequence as punishment, and different people have different perceptions of what is punishing. One student may find suspension from school punishing, while another student wouldn't mind at all. The process of punishment is diagrammatically presented as follows:

CONSEQUENCE

EFFECT

Behaviour → Punisher → Weakened or decreased behaviour

It is important for you to understand that when students are learning a new behavior, they will learn it faster if they are reinforced for every correct response. This is a **continuous reinforcement schedule**. Then, when the new behaviour has been mastered, they will maintain it best if they are reinforced intermittently rather than every time. An **intermittent reinforcement schedule** helps students to maintain skills without expecting constant reinforcement. It may be done on the basis of **ratios** of work completed or **intervals** of time.

Social learning approach

In recent years, most behaviorial psychologists have expanded their view of learning to include the study of **cognitive processes** like thoughts, expectations, beliefs, etc., that cannot be directly observed. A prime example of this expanded view is Albert Bandura's **Social cognitive theory**. Bandura demonstrated that modelling otherwise known as **imitation** or **observational learning** is the basis for a wide range of learning, especially in children. He recognised that children may acquire many favourable and many unfavourable responses in the absence of direct rewards and punishments, simply by watching and observing others around them. This theory places a strong emphasis on how children think about themselves and other people. It also states that children become gradually **more selective** in what they **imitate**. They consciously select and imbibe certain behaviour (learning by introjection). Observational learning actually challenges the behaviourist idea that cognitive factors are unnecessary in an explanation of learning. It suggested that if people can learn by watching, they must be focussing their attention, constructing images, remembering, analysing and making decisions that affect learning.

Bandura further differentiates between **enactive learning**, i.e., learning by doing and experiencing the consequences of your actions and **vicarious learning** i.e., learning by observing others. Let us explore and study this idea of learning by observing others, further.

Learning by observing others

There are two main modes of **observational learning**. First, observational learning can take place through **vicarious reinforcement**. This happens when we see others being rewarded or punished for particular actions and then modify our behavior as if we had received the consequences ourselves. For example, if you compliment two students on the attractive illustrations and graphics in their laboratory reports, several other students who observe your compliments may turn in illustrated lab reports next time. This demonstrates vicarious reinforcement. **Punishment** can also be **vicarious**. You may slow down on a stretch of a road after seeing several people get tickets for speeding there.

College students are often known to give up many weight reduction diets after they see their friends suffering bad health and vice versa.

In the second kind of observational learning, the observer imitates the behavior of a model even though the model receives no reinforcement or punishment while the observer is watching. Often the model is demonstrating something the observer wants to learn and expects to be reinforced for. For example, mastering the proper way to position hands while playing a musical instrument or the correct way to assemble laboratory equipment.

Imitation can also however occur when the observer simply wants to become more like an admired or high-status model, thus indicating that observation can be a very efficient learning process. Many college students fashion their dress, their bodies, their styles of talking, etc., on different models who they hold in high esteem. They also choose their career goals inspired by persons whom they hold in high regard. These persons become their role models.

Bandura identifies three forms of reinforcement that can encourage observational learning. First, of course, the observer may reproduce the behaviors of the model and receive **direct reinforcement**, as when a student cricketer successfully executes a **boundary shot** and the coach/model says, 'Excellent!' But, the reinforcement need not be direct; it may be **vicarious**. As mentioned earlier, the observer may simply see others reinforced for a particular behavior and then increase his or her production and following of that behavior. Most television advertisements hope for this kind of effect. People in commercials become deliriously happy when they drive a particular car, or drink a specific juice and the viewer is supposed to do the same. The viewer's behavior is reinforced vicariously by the actors' obvious pleasure. The final form of reinforcement is **self-reinforcement**, or controlling your own reinforcers. This sort of reinforcement is important for both students and teachers. We want our students to improve not because it leads to external rewards but because the students value and enjoy their growing competence. As a teacher you must have experienced that sometimes self-reinforcement is all that keeps you going. Social learning and cognition are influenced by a number of factors. Examine the following box to gain an understanding of these.

Characteristic	Effects on modeling
1. Developmental status	Improvements with development include longer attention span and increase capacity to process information, use cognitive strategies, compare performance with memorial representative and adopt interior motivators.
2. Various consequences	Consequences to models convey information about behavioural appropriateness and likely outcomes of actions. Valued consequences motivate learners. Similarity in attributes and competence signal appropriateness and heighten motivation
3. Outcome expectations	Observers are more likely to perform modeled actions which they believe are appropriate and will result in rewarding outcomes.
4. Goal setting	Observers are more likely to attend to models who demonstrate behaviors that help observers attain goals.
5. Model prestige and competence	Competent and high status models are favoured more
6. Self-efficacy	Observers attend to models when they feel they are capable of learning or performing the modeled behaviour. Observation of similar models affects self-efficacy (if they can do it so can I)

Figure 2 Factors in social cognitive theory

It must be clear to you from what you have read in this box, that there is tremendous potential for explaining how learning occurs through the social cognitive theory, at all stages in the human life span. In the case of adolescents and youth, this appears to be

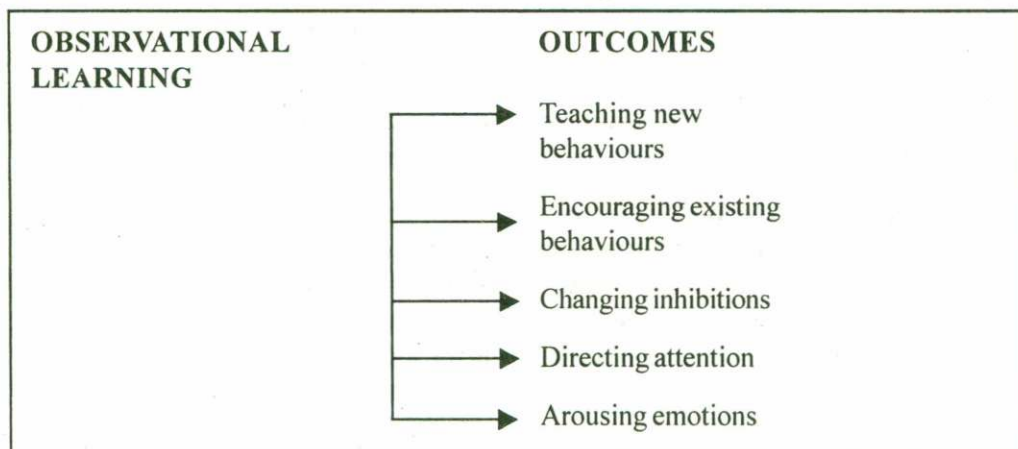


Figure 3 Outcomes of observational learning

Information processing approach

Information processing is a cognitive theory that examines the way knowledge enters and is stored in and retrieved from memory. It has been the most prominent cognitive theory during the twentieth century, and has important implications for teaching. Think back for a moment to courses you have taken during your schooling. You probably studied geography, perhaps chemistry, and now you are taking educational psychology. In geography, you examined the face and makeup of the earth, and in chemistry, you studied the structure of the atom. Because you can only directly experience a small portion of the earth, you doubtlessly made frequent use of maps and globes. The globe is a miniature representation of the earth, faithful in shape and proportion - a model. Like-wise, in chemistry you cannot directly observe the atom with all its individual parts, so scientists created a model, to help people visualize it. In this case the model is a representation that allows learners to visualize what they cannot observe directly.

People encounter a similar situation when they try to visualize what occurs during information processing. They cannot directly observe the structures and mechanisms that operate when they process information, so they use a model to help represent this process.

The information-processing model of learning is based on a computer analogy.

The human-computer analogy is based on the observation that both computers and humans engage in cognitive processes such as learning (or acquiring knowledge), remembering (or retrieving knowledge), making decisions, answering questions, and so on. Computers perform cognitive tasks by processing information - taking symbols as input, applying operators to the input, and producing output - so it follows that perhaps humans are also information processors.

The model has three major components:

- Information stores
- Cognitive processes
- Metacognition

Information stores are repositories used to hold information. They are analogous to computer files; filing cabinets, or address books where people store information. The information stores in the information-processing model are sensory memory, working memory, and long-term memory.

The second component consists of **cognitive processes**, intellectual actions that transform information and move it from one store to another. These processes include attention, perception, rehearsal, encoding and retrieval. Cognitive processes are analogous to the programs that direct and transform information in computers.

The third component of the information processing model is **metacognition**, which is knowing about and having control over cognitive processes.

Sensory memory is the information store that briefly holds stimuli from the environment until they can be attended to and further processed. Sensory memory is critical to further processing. In trying to read, for example, if the words at the beginning of a sentence were lost from your sensory memory before you got to the end, it would be impossible to get any meaning from the sentence. The same is true for spoken language. Sensory memory allows you to hold information long enough to transfer it to working memory, the next store.

Working memory is the information store that retains information as the person consciously works with it. It is where deliberate thinking takes place. It is a 'workbench' of memory that temporarily holds information as it is being used or worked on. Working memory has two important characteristics: it screens information that comes into it, and it is limited in capacity and duration (without rehearsal, it can hold about five or nine items for about 10 to 20 seconds for adults).

Long term memory is our permanent information store. In a sense, it's like a library with millions of entries and a network that allows them to be retrieved for reference and use.

The information processing approach gives us a very significant and meaningful understanding of how individuals cognise and comprehend their world. It also includes explanations about their processing, storage and retrieval skills and abilities which are very convincing. In the case of young adults particularly, this approach appears to be very relevant and a suitable one for understanding the ways in which they learn.

Constructivist approach to learning

This view emphasizes the **active role** of the learner in building understanding and making sense of information. There is no one constructivist theory of learning. Some theories focus on how individuals **make meaning**; others emphasize the **shared, social construction** of knowledge. Individual **constructivists** are concerned with how individuals build up certain elements of their cognitive or emotional apparatus. They are interested in individual knowledge, beliefs, self-concept, identity, etc – all of which deal with the inner psychological life of persons. Vygotsky's **social constructivism** emphasizes that **social interaction, cultural tools and activity** shape individual development and learning. By participating in a broad range of activities with others, learners internalize the outcomes produced by working together. They acquire new strategies and knowledge of the world and culture. Although Vygotsky's theory is interested in understanding developments within an individual it relies heavily on **social interactions** and the **cultural context** to explain learning. He is thus both an individual and social constructivist. For example, in his concept of the zone of proximal development – the area where a child can solve a problem with the help (Scaffolding) of an adult or more able peer – has been called a place where culture and cognition create each other. Culture creates cognition when the adult uses **tools and practices** from the culture (language; maps, music, stories) to steer the child towards goals the culture values (reading, writing, dancing, singing). The term constructivism is also used to talk about how public knowledge is created in disciplines like Science, Math, Economics, History, etc. Even though there is no single constructivist theory, many constructivist approaches recommend:

- Complex, challenging learning environments and authentic tasks
- Social negotiation and shared responsibility as a part of learning

- Multiple representations of content
- Understanding that knowledge is constructed
- Student - centred instruction

The constructivists believe that students should not be given simplified problems and basic skills drills, but instead should encounter **complex learning environments** with ill structured problems. Complex problems are not simply difficult ones. They have many parts. There are multiple, interacting elements in the problems and multiple solutions are possible. Further, these complex problems should be embedded in **authentic tasks** and activities which mean the kind of situations that students will face as they apply what they are learning to the real world. The constructivists believe that higher mental processes develop through **social negotiation** and interaction, so collaboration in learning is valued. Further, they believe in **multiple representation of content** which uses different analogies, examples and metaphors, so that students don't oversimplify and generalize one explanation to different contexts. Their conceptualization of **student – centred instruction** means, keeping the students **own efforts to understand** at the center of the teaching-learning process. The strategies on the part of the teacher based on this approach would include **inquiry** and **problem - based learning cooperative learning, dialogue and instructional conversations**, and **cognitive apprenticeships**. Let us discuss the meaning of these terms.

Inquiry learning refers to an approach in which the teacher presents a puzzling situation and students solve the problem by gathering data and testing their conclusions.

In **problem - based learning**, students are confronted with a real problem that has meaning for them. The problems must be realistic, but not necessarily having the 'right answers'.

Cooperative learning is an arrangement in which students work in mixed-ability groups and are rewarded on the basis of the success of the group. It is based on face-to-face interaction, positive interdependence individual accountability, collaborative skills and facilitative group processing.

Instructional conversations refer to situations in which students learn through interactions with teachers and/or other students.

Cognitive apprenticeships refer to a relationship in which a less experienced learner acquires knowledge and skills under the guidance of an expert. Cognitive apprenticeship usually involves the following:

- Students observe an expert (usually the teacher) **model** the performance
- They get external support through **coaching** or tutoring and conceptual **scaffolding**.
- They then **reflect** on their progress and explore new ways to apply what they are learning, especially those which they have not practiced at the master's side.

The constructivist approach to learning thus holds tremendous potential for implementation in college classrooms as well.

Humanistic approach

Humanism opposes the mechanistic, biological reductionist approach which reduces humans to assembly line productions, governed by their genetic blue-prints. Rather, it emphasizes the **uniqueness and value of every person** determined by his/her **need for self actualization**. This view of behaviour focuses on the **subjective** qualities of human experience (the phenomenological reality) and the **personal meanings of experiences** to a person. It lays stress on the positive aspects of people, their inner directed and

conscious motivations and their self-directed goals with emphasis on freedom of choice. 'The person in so far as he is a real person, is his own main determinant. Every person is, in part, his own project and makes himself' (Maslow, 1968) is the main premise on which humanism rests.

From a humanistic point of view, a major purpose of education is to help develop each student's individuality, to assist him in realizing the potential that already exists within him. An important implication for the teaching learning process from this point of view is the emphasis on **helping or facilitating** so that each student can **decide** for himself who he is and what he wants to be. To accomplish this, Humanists advocate **student-centred pedagogy** and **discovery oriented instructional procedures**. This school of thought, believes in accelerating the affective growth of students with critical thinking, self reliance, and commitment to learning achieved through **cooperative learning** and **open classrooms**, where students learn by exploring their external environments, making decisions and internalizing in all they have learnt.

The role of the teacher is less that of a director, coercer, or manipulator and more that of one who **assists** and **helps** students in their **process of becoming**. Humanistic teachers usually begin where the students' perceptions are and not where their own perceptions happen to be.

Two elements of the teaching – learning process which are very significant in humanistic psychology, are the **student - teacher relationship** and **classroom climate**. Carl Rogers (1967), a prominent thinker in the humanistic movement, suggested that effective teachers should embody three qualities that promote the student teacher relationship

- They should be **genuine**, real people, without facades, who embrace their feelings as their own.
- They should be **accepting**, viewing students as worthy individuals in their own right.
- They should be **empathetic** and able to consider teaching - learning experiences from students' points of view.

Classroom climate is an outgrowth of the collective student – teacher relationships that form over time. Humanistic classrooms are safe environments where students believe they can learn and are expected to do so. Standards remain high but attainable. Each person is valued because he/she is an innately valuable human being.

The humanistic approach thus emphasizes the importance of climate building and attitudinal preparation on the part of teachers in making the teaching - learning experience for students memorable, enjoyable and enriching at the helm of the teaching – learning process. This has many implications for college learners as well.

Evaluation of the approaches to learning

From the brief overview presented in this unit, it can be seen that learning theories have a rich and diverse heritage. In the early 20th century, came the school of **behaviourism**, founded by J.B. Watson which was determined to convert psychology into a science. Watson viewed it as a purely objective experimental branch of natural science. Its theoretical goals were prediction and control of behavior. Behavior referred to covert behavior and studied associations. The mind was perceived as a black box and Watson felt that mental events should be ignored as they could not be studied or observed directly and were not scientifically measurable. The behaviourists denounced introspection or the existence of any higher order cognitive functioning. Consciousness, they felt should be left to philosophers. Thus, the focal point of epistemological inquiry for centuries was looked upon as a hindrance by behaviorists and replaced by prediction and control of behaviour.

However with the development of new research, a paradigm shift took place within the school of behaviourism dividing it into the behaviorists of yore, now called **radical behaviourists** and the **neo-behaviorists** who had a softer and more liberal approach towards learning. The social learning theory advanced by Bandura is one such example. This theory although based, in part on a model of operant conditioning, recognises the fundamental importance of our ability to symbolize, to imagine, to ferret out cause and effect relationships and to anticipate the outcomes of our behaviour making it as much cognitive as behaviouristic. Social learning theory empowers the human being as a thinking, knowing, rational individual in the process of absorption from the environment and in turn influencing it, all the same.

With the advent of post second world war, Communications technology, coupled with the growth of **cognitivism**, the world of learning tilted favourably towards the **information-processing approach** which views humans as active processors of information which they receive from the environment and then act on that information. It emphasises the S-O-R psychology recognising the important role that the organism (O) plays in symbolizing, planning, analysing, engaging in insightful action i.e. processing the stimulus (S) to produce or create a reaction or response (R). The important point about information - processing psychology is, that it attempts to understand and specify the internal mechanisms. It is not simply a matter of expectation or processing. The whole point is that one tries to be very specific about the exact stages of processing that take place and to spell out the properties of the internal mechanisms.

Then came the third force of psychology - humanism and its influence on learning. This concerned itself with empowering the human being as an **active, rational** being en route to **self improvement** and **self actualization**. The humanists believed in the uniqueness and the individuality of man as opposed to a stimulus driven person. According to them, learning is self directed, aimed at self improvement, which can be achieved through open communication, a real caring for people and genuineness. It emphasises the individual's preference or learning style putting a proactive learner in charge of selecting, symbolizing and processing potential learning material. The choice of what to learn and how to learn is uniquely personalised, is criterion referenced and encourages mastery learning thus enabling the individual to realize his potential and make optimum utilization of resources at his disposal.

Last but not the least, we cannot deny the influence of beliefs, traditions and values and social experience on cognitive development. The **situated learning approach** stresses upon the socio-cultural dimension in shaping our learning. This approach propounded by Lev Vygotsky, maintains that various things we learn like facts, concepts, rules, problem solving skills and attitudes are strongly influenced by the kinds of social interactions that justify our culture. Vygotsky's notion of producing cognitive development by embedding instruction in one's culture and within a student's zone of proximal development is an attractive one, as it highlights the impact of the socio-cultural environment. It is the only theory which contextualises leaning, embedding it with in the cultural factors and the process of socialization.

One reason for studying learning from different perspectives is that as a teacher it enables you to use a variety of instructional techniques to achieve diverse objectives in the cognitive, affective and psychomotor domains and orients you to a large repertoire of view points, each significantly contributing and adding value to the concept of learning.

In sum, classroom learning is too complex a behavior to be fully understood from one point of view. Besides, concepts like reinforcements, shaping, modeling, encoding, retrieval from memory, analyzing etc. all complement each other even though they represent different perspectives.

Summary

This unit deals with some of the important approaches to learning like classical conditioning, social learning, information processing, constructivist approach, etc., each representing

a separate orientation to learning, thereby helping you to achieve a multi-dimensional view of learning. You must have also appreciated the enormity and diversity of work that exists in this area.

The unique methods put forth by each of the approaches are also discussed to enable you as a teacher to use differential instructional techniques, thus enhancing the teaching - learning process by making it more meaningful and an educationally enriching process. The college classroom has been particularly kept in mind.

A summative evaluation of the different approaches to learning is also presented, so as to enable you to chronologically place these theories as antecedents as well as consequences of each other, in the developmental history of learning theories. This must have enabled you to develop a perspective of your own.

Unit-end exercises

1. What do you understand by classical and operant conditioning? What is the difference between a response 'elicited' and a response 'emitted'?
2. How would you set up a humanistic classroom? What benefits would accrue to your learners from it?
3. The social learning approach to understanding the process of learning is very relevant in the context of young adults in India. Discuss.
4. 'Constructivism' places the learner at the center of the learning process. Discuss the implications of this statement for organizing the teaching-learning processes in the classroom.
5. According to you, which approaches to learning are the most relevant for young adults and why?

Suggested readings

Ausubel, D.P., and Novack, J.D. (1978) *Educational Psychology: A Cognitive View* (2nd ed.), New York: Holt, Rinehart and Winston.

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The Special Learner : Concepts, Needs and Facilitation Strategies

Introduction

“Only the brave dare look upon things which can’t be explained easily.....upon the things which often engender mistakes.....And thus only the brave look upon difference without flinching.”

Adaptation from Richard H.Hungerford

In the previous units of this block, you were acquainted with the concept and theories of learning, and the factors influencing it in the context of normal, average learners. In this unit, the focus will be on enabling you to understand the exceptional or special learner. The study of the exceptional or special learner is the study of differences, for this learner is different from the average learner in many ways. Let us try to understand who the special learner is. What makes him/her so special or exceptional? Is he/she really handicapped or challenged, suffering from a disability or living with special abilities? The current unit seeks to examine and understand exceptional learners in great detail and also shed light on the teaching – learning strategies specifically designed for them. As you read through this unit, you will begin to appreciate the importance of knowing about special learners and their context. Although you may not directly come in contact with many of them, it is important for you as part of your knowledge in psychology to have a conceptual understanding of them and also an attitude of empathy and concern for them. This unit has been specially included and designed, keeping these aspects in mind.

Learning outcomes

After studying this unit, you will be able to :

- understand the concept of special education;
- conceptualize the different kinds of exceptional learners;
- define the role of the community and society in dealing with the special learner;
- understand the various teaching strategies, evaluation criteria and facilitative methodology for the special learner;
- relate exceptionality to special needs;
- build up a meaningful cognitive and attitudinal perspective towards special education.

Special education : issues and trends

Let us begin by trying to find answers to the following questions:

- What is this branch of education that we call ‘special’?
- Why does it exist?
- How does it deal with individuals who are exceptional?

By definition, **special education** is instruction designed for students with disabilities or gifts and talents, who also have **special learning needs**. Some of these students have difficulties in formal institutions so they need special education provisions to function in

their classrooms. Others generally do well in regular classrooms, but they also need special educational provisions to realize their **full potential**.

Students are exceptional when they :

- Meet certain specified criteria of deviation from what is **expected** in a regular classroom
- Require modification of school practices or special services to **develop** to an optimum level so as to maximize their potential.

Statistically speaking, the probability of exceptionality can be depicted on a Normal Probability Curve as shown below :

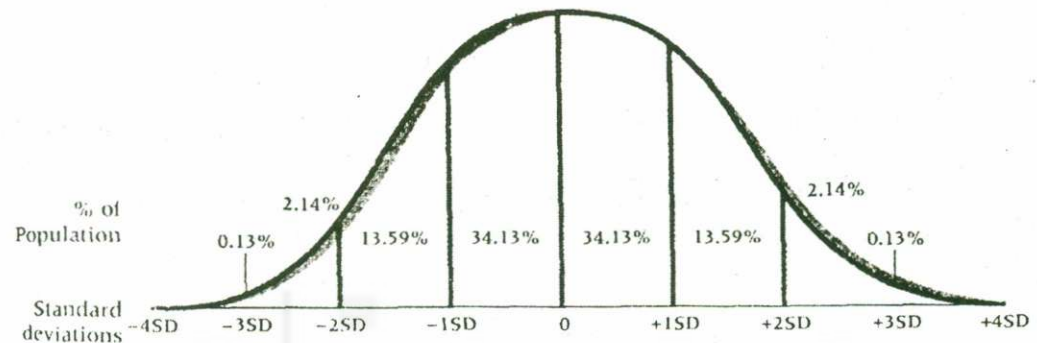


Figure 1 Normal probability curve

In this curve, the shaded portion at +2SD and -2SD and beyond at either end denotes exceptionality.

Special educators use these numerical standards to define exceptionality, focusing upon the small percentage of the cases at either end of the curve. Otherwise, common labels used by professionals to describe physical and behavioral differences include disorder, disability, and handicap. However, It must be understood that these terms are not synonymous. **Disorder**, the broadest of the terms, refers to a general malfunction of a mental, physical or psychological process. A **disability** is more specific than a disorder and results from loss of physical functioning (e.g. loss of sight) or from difficulty in learning and social adjustment that interferes with normal growth and development. A handicap is a limitation imposed upon the individual by the environmental demands and is related to the individual's ability to adjust or adapt to those demands.

Labeling of individuals is however unhealthy and can cause the person to feel unworthy and be viewed by society as deviant. These individuals often grow with a poor self concept and low self esteem. Since **disability is a socially created construct** (i.e., what is considered as a disability is a matter of social perceptions and values and not inherent characteristics) it gives rise to unnecessary prejudices and stereotypes. Consequently, the advocates for people with disabilities suggest either using different labels (e.g. visually challenged instead of blind) or doing away with the labels altogether. The contemporary view and practice is to use the term **challenged** to connote exceptionality or special needs.

History of special education

There have always been exceptional children, but there have not always been special educational services to address their needs. In the pre-revolutionary era, the most society had offered children with disabilities was protection – asylum from a cruel world into which they did not fit in or survive with dignity. But as the ideas of democracy, individual freedom and egalitarianism swept USA and France, there was a change in attitudes.

Political reforms and leaders in medicine and education began to champion the cause of children and adults with disabilities, urging that these “imperfect” or “incomplete” individuals be taught skills that would allow them to become independent and productive citizens. These humanitarian sentiments went beyond a desire to protect and defend people with disabilities. The early leaders sought to normalize exceptional people to the greatest extent possible and confer upon them the human dignity which they presumably lacked.

Jean-Marc-Itard (1775-1838) a French physician is the person to whom most people trace the beginning of special education, as we know it today. He was responsible for educating Victor – a 12-year-old “hopeless idiot” through systematic and patient educative procedures. Among the other thinkers who made a mark on special education was Samuel G. Howe (1801-1876) – a social and political reformer who was instrumental in emancipation of the deaf and blind.

Special education did not suddenly spring up as a new discipline nor did develop in isolation with other disciplines. The emergence of psychology, sociology and especially the beginning of mental testing had enormous implications for the growth of Special Education. Moreover, anthropologists and social workers drew attention to the ways in which exceptional children’s families and communities responded to them and affected their learning and adjustment.

Current trends in special education

The trend towards **integration** of people with disabilities into the larger society began in the 1960s and continues unabated. Much of the philosophical rationale for integration comes from the principle of **normalization**. Normalization is a philosophical belief in special education which asserts that every individual, even the most disabled, should have an educational and living environment as close to normal as possible. Two important movements in the drive towards more integration and normalization have been **de-institutionalization** and the **Regular Education Initiative (REI)**. Started in the 1960s, De-institutionalization is a trend to move people with disabilities into closer contact with the community and home, thus acting as a major catalyst for integrating persons with disabilities into the larger society.

In the 1980s, the U.S. government began the Regular Education Initiative, a loosely defined movement that emphasized upon general education rather than special education, to be the focus for educating children with special needs along with **mainstreaming** which is the practice of placing students with disabilities in general classes and schools, with their non disabled peers, for all or a part of the day and yet identifying them as special education students. Advocates of REI saw mainstreaming as only a half hearted effort and thus came in the era of **full inclusion**, which contends that all students with disabilities should be placed in general education classrooms, living up to the **Salamanca** spirit of education (with dignity) for all.

Special education may be provided under a variety of **administrative plans**. Some exceptional students are served in the **regular classroom by their regular classroom teacher**, sometimes in consultation with other professionals such as psychologists and teachers with more experience. Some are served by an **itinerant teacher** who moves from institution to institution, or by a **resource person**. Sometimes, students are placed in a **diagnostic perspective center** so that their special needs can be determined. Hospital and homebound instruction are provided only when the student is unable to go to regular classes. Finally, the **residential school** provides educational services and management of the daily living environment for students with disabilities who must receive full time care.

The Current trends in the education of learners with special needs are presented in figure 2 given below.

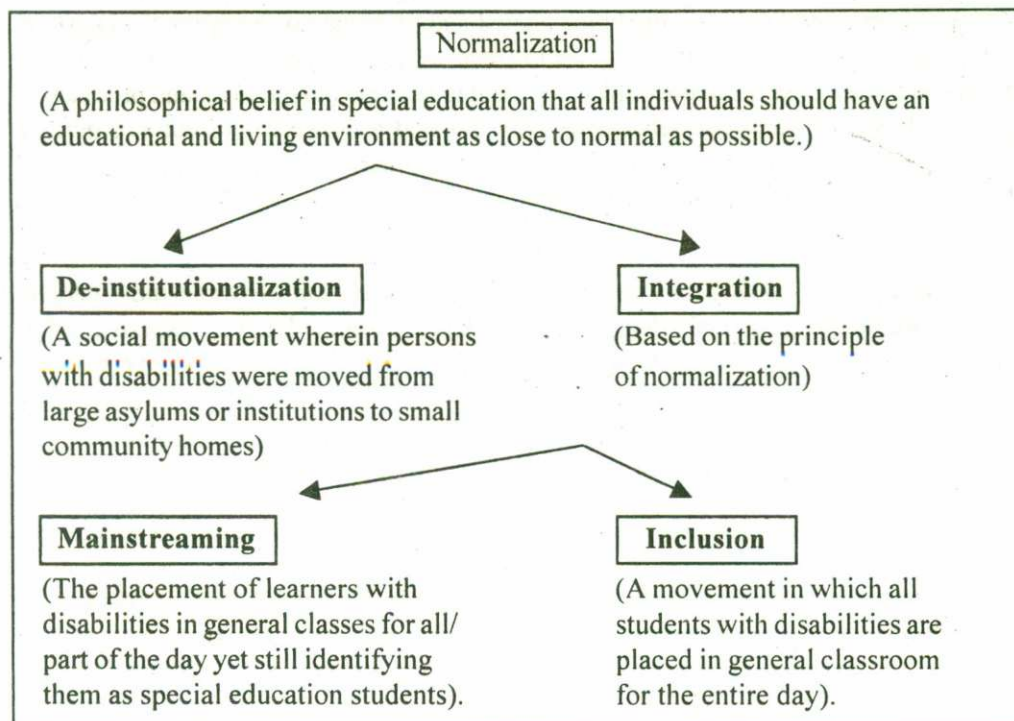


Figure 2 Current trends in education of learners with special needs

Let us also try to identify some of the concerns and challenges which teachers and other significant adults need to address when dealing with special learners. These are presented as the expectations from teachers dealing with special learners in the figures given below.

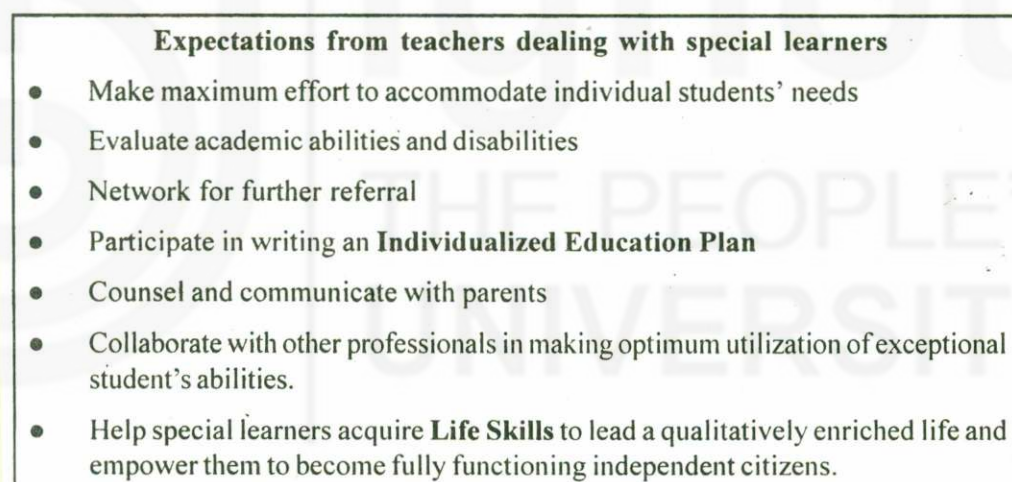


Figure 3 Showing the concerns for children with special needs

The provisions made by the Government of India are given in figures 4 and 5 given below.

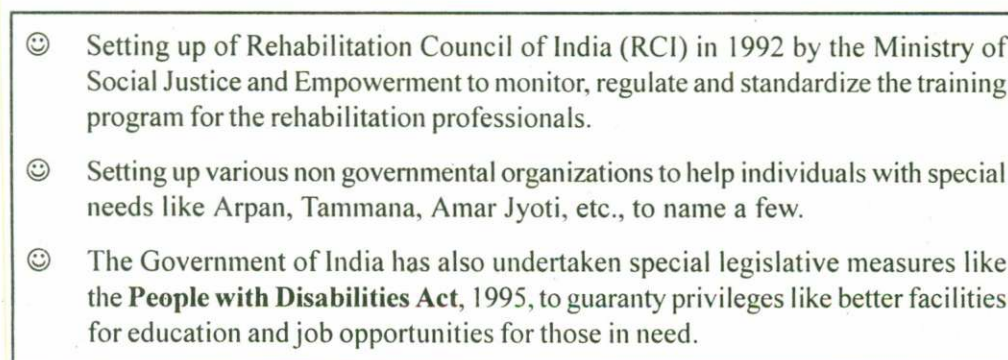


Figure 4 Provisions for Special Education in India

VISION 2000

- 1,000 special schools to be set up in the next 20 yrs.
- Parity in education of the disabled.
- Research should be undertaken to improve the quality of Special education in India.
- Provide equal opportunities to people with disabilities.

Figure 5 Highlighting main provisions of Vision 2000, (Document released by RCI)

Classification of learners with special needs

Who is considered as a learner with special needs? Learners labeled as exceptional in today's classroom are those with differential gifts and challenges. Given below are descriptions of some learners, categorized on the basis of their special needs and the nature of challenges faced :

Sensory disabilities are of two types. i) Visual impairments : These individuals have special learning needs in areas requiring the functional use of vision.

ii) Hearing impairments : These individuals have special learning needs in areas requiring the functional use of hearing.

Orthopaedic impairments : These individuals have special learning needs in areas requiring the functional use of hands, arms, legs, and other body parts.

Autism : This is a specific development disability that significantly affects communication and social interaction.

Learning disability : These individuals have special learning needs in areas requiring the functional use of speaking, writing and arithmetic skills.

Gifted and talented : These individuals have special learning needs in areas requiring the functional use of intelligence and artistic ability and creativity.

Emotional disturbances : These individuals have special learning needs in areas requiring the functional use of social and emotional skills.

Speech or language impairments : These individuals have special learning needs in areas requiring the functional use of language and communication skills.

In the subsequent sections, some of these categories will be discussed in greater detail.

Learners with autism

Autism means a **developmental disability** significantly **affecting verbal and non-verbal communication and social interaction**, generally evident before age three, that adversely affects educational performance. The word autism comes from the Greek word **autos** which means **self** to indicate the extreme sense of isolation and detachment from the world around them, that characterizes those individuals who are autistic.

Autism is one of the most disruptive childhood disabilities, resulting in varying degrees of **deficiency in language, interpersonal skills, emotional or affective behavior and intellectual functioning**. It is a disability that impairs the normal development of many areas of functioning, debated to be caused by genetic factors (Fragile X syndrome) or damage to the central nervous system in the prenatal, or postnatal stages.

Autism is often characterized by irregularities and impairments in communication, engagement in repetitive activities, stereotyped movements, resistance to environmental change in daily routine and unusual responses to sensory experience. Individuals may be

unresponsive to physical affection, avoid eye contact and avert their gaze rather than looking directly at another person. Relating to other people is extremely difficult for them, thus they often prefer inanimate objects.

Learning characteristics

Individuals with autism are usually not able to generalize already learnt skills to other settings or topics. They are often impulsive and inconsistent in their responses. Being low on I.Q. (70 units or less) such children have difficulty with abstract ideas and information processing and may focus on one or more select stimuli while failing to understand the general concept.

They enjoy routine tasks and encounter cognitive shifting difficulties in shifting attention to the next topic.

Alternatively, it is also seen that some individuals with autism seem to have relatively long term memory skills, particularly for factual information.

Strategies for facilitation

- Development of an **Individual Educational Plan (IEP)** tailor made for a specific individual learner keeping in mind, his needs, and his special requirements.
- **Promote involvement** of the individual in social activities, which enhance interpersonal interaction like hobby clubs.
- Avoid abstract ideas and be as **concrete** as possible.
- Use **task analysis** i.e. break down a difficult problem into a series of non-complicated subtasks.
- Develop **peer assistance programs** where older friends can help tutor and model appropriate behavior for individual with autism.
- Encourage the development of a strong, ongoing, **school-parent relationship and support groups** working together to meet the individual needs.
- **Emotionally, be supportive of the individual.** Do not ridicule him and exercise patience and empathy; Don't take misbehaviors personally – the individual isn't trying to make your life difficult.
- Concentrate on one behavior as a target for change, work on the positive, **increasing appropriate behavior** rather than focusing solely on inappropriate behavior.
- Seek out **medical intervention** in the form of drugs and medication like the use of anti psychotic drugs etc., which help to reduce self injurious behaviors and unusual speech patterns.

Visually challenged learners

Individuals with visual impairments are generally assigned on a functional basis to two groups : **the partially sighted** and the **blind**. The first group consists of those who are able to use their sight in some way to read (e.g. using special glasses); those classified as blind are unable to read by means of vision and thereby have to use their fingers to read Braille, or have to use tapes or audio books. From a medico-legal standpoint, individuals are defined as blind if the central visual acuity in the better eye is less than 20/200. Individuals with visual acuity ranging from 20/200 to 20/70, are defined as partially sighted. The causal factors for visual impairments may range from prenatal factors (like genetic disorders, infection, etc) to perinatal and postnatal complications (injury, accident, toxic inhalation etc). Individuals with visual impairment may frequently have associated problems like mental retardation, other sensory defects, motor impairment, learning disability, etc.

Behavior	Appearance
Rubs eyes excessively	Crossed eyes
Has difficulty in reading	Red-rimmed or swollen eyes
Blinks more frequently than others	Inflamed or watery eyes
Holds books close to one's eyes	Recurring styes
Squints eyelids together or frowns	
Complaints	
	eyes itch, burn
	can't see well
	dizziness or nausea following close eye work/headaches
	double vision

Figure 6 Warning signs for visual problems

Most visual problems are the result of errors of refraction. The most common visual impairments are myopia (near sightedness), hypermetropia (far sightedness) and astigmatism (blurred vision). Eyeglasses or contact lenses can usually correct these problems. More serious impairments include glaucoma, cataracts, diabetic retinopathy etc., some of which are due to hereditary factors.

Learning characteristics

Most authorities believe that visual impairment may result in a few subtle language differences, but not deficient language skills. Also, blindness does not result in intellectual retardation. There are some differences in conceptual development because children with visual impairment rely more on **touch** to learn about the world. They also need to be more vigilant to pick up information from their environment. Research has shown that early training in the use of strategies helps children who are blind, use their **sense of touch** more efficiently.

Comparing the academic achievement of students with visual impairment to that of students who are sighted is difficult because the two are tested under different conditions. Evidence suggests, however, that students with visual impairment are behind their sighted peers in achievement.

Personality problems are not an inherent condition of visual impairment. Any social adjustment problems that students with visual impairment have are usually due to society's reaction to blindness. The stereotypic behaviors (e.g., eye poking and body rocking) exhibited by a few persons, who are blind can be an impediment to social acceptance, but researchers are working on developing techniques to diminish their occurrence.

A very important ability for the successful adjustment of people with visual impairment is mobility. However, there is no one-to-one relationship between the age at onset and the degree of visual loss and mobility skills. Those who are able to conceptualize their environments as cognitive maps have better mobility skills than do those who process their environments sequentially, since mobility skills largely depend on spatial ability.

People who are blind do not, as is commonly thought, have an inherent obstacle sense. But some can develop the ability to detect obstacles by detecting changes in the pitches of echoes as they approach obstacles. Another myth is that people who are blind automatically develop better acuity in other senses. What they actually do is become adept at picking up other sensory cues in their surroundings, thus making better use of their intact senses.

Strategies for facilitation

Educational experiences in regular classrooms are frequently visual. But with some modifications, teachers can usually apply the same general principles of instruction to both students with and without visual impairment. Since the mid-1960s, there has been a sharp decline in the use of Braille. Many professionals are now decrying this decrease because they believe it has led to a **high rate of illiteracy**. The National Federation of the Blind has lobbied for Braille bills to increase the availability of Braille and to establish Braille competency for all teachers of students with visual impairment. Braille is now also being recommended for those with low vision as it might worsen over the years.

In addition to Braille, **large-print books** and **audio tapes** are available. Also, scientists are developing a number of **technological devices**; examples are the Optacon, the Kurzweil Reading Machine, and the PC/Kurzweil Personal Reader. Various PC-based reading machines are becoming available, as well. In order to give **mobility training** the use of the long cane, guide dogs, and electronic devices can be used. Most mobility instructors recommend the long cane for the majority of individuals who are blind. At one time, mobility instruction for children did not begin until elementary or secondary school. Now, most authorities recommend that mobility instruction should begin in preschool.

Education for the adolescent and adult stresses independent living and employment skills. Independence is a particularly important area because society often mistakenly treats people with visual impairment as helpless. Many adults with visual impairment are unemployed or overqualified for their jobs. Professionals are attempting to overcome the bleak unemployment picture by using innovative approaches.

The four basic educational placements for students with visual impairment from most to least segregated, are **residential school, special class, resource room, and regular class with itinerant teacher services**. Residential placement, at one time the most popular alternative, is now recommended much less frequently than regular classrooms with itinerant services. The relatively low incidence of visual impairment makes the use of resource rooms and special classrooms less practical.

Auditory impairment

Individuals with auditory/hearing impairment are also generally classified into two groups, namely the **deaf** and the **hard of hearing**. The deaf are those individual whose auditory channel fails to serve as a means of processing speech. The individual who is hard of hearing is one whose auditory channel is viable at some level of amplification for receiving speech. Pre and post natal visual infections (rubella, meningitis) and genetic factors are among the most significant casual factors leading to hearing impairment. Other causes include toxic agents, and trauma.

Impairment of hearing ability can have a profound effect on people, largely because of the emphasis on spoken language in our society. In the past, because they held the notion that language is the equivalent of thought, professionals believed that deafness led to intellectual inferiority. Researchers now question the theory that thought is dependent on language. Furthermore, authorities now recognize that sign language is as true a language as spoken language. They recommend that people who are deaf be tested in language and/or with non verbal tests of intelligence.

Learning characteristics

The academic achievement of students with hearing impairment is very low. Even in math, their best academic area, they demonstrate severe underachievement. Several studies have shown that individuals who are deaf and have parents who are deaf have higher reading achievement than individuals who are deaf and have hearing parents. This is probably because parents who are deaf are able to communicate more easily with their children through sign language.

Because of problems of finding people with whom to communicate, learners who are deaf are at risk for loneliness. This problem is particularly acute in mainstream settings, in which there are few students with hearing impairment with whom to communicate. Some authorities also believe that students who are deaf, who have hearing parents may experience more unhappiness because of the difficulty they have in communicating with their parents.

On account of these problems in communicating with the larger society, many people who are deaf socialize almost exclusively with others who have hearing impairment. At one time, many professionals viewed this tendency toward isolation as negative. Today more and more authorities are pointing out the potential benefits of a **deaf culture**, namely a sense of belonging to a group and positive self-image by belonging to the group.

Strategies for facilitation

For many years, there were two basic approaches to teaching students with hearing impairment: **oralism** and **manualism**. Today, most educators of students who are deaf favour **total communication**, a blend of oral and manual techniques. Most educators who use total communication stress the **auditory-verbal approach**, **speech reading**, **sign systems** and **finger spelling**.

Use of sign language : Proponents of American Sign Language (ASL) argue that it is a grammatically sophisticated, highly evolved language of its own, and is of immense importance in educating the hearing impaired.

Construction of an IEP can help the learner learn more effectively, adjust better to his surroundings and empower him to be an independent member of the society.

Numerous **technological advances** are helping persons with hearing loss. These innovations are occurring primarily in the areas of **hearing aids**, **television**, **telephones**, **computer-assisted instruction** (CAI), and the **information superhighway**. (refer to the figure given below)

Students with hearing impairment can be found in a variety of settings, ranging from **inclusion** in general education classrooms to **residential settings**.

Various **institutions** have been set up by the Government of India to facilitate educational and employment opportunities for hearing impaired individuals (e.g., National Technical Institute for the Deaf) in order to help them overcome these challenges and be fully assimilated in society.

- **E-mail** : It allows people to communicate with one another. Deaf people may also subscribe to the online lists and newsgroups devoted to deafness along with a multimedia of different subjects.
- **WWW** : The world wide web allows such individuals access to a variety of information sources.

Figure 7 Information superhighway : a boon for the deaf



Figure 8 Features of the deaf culture

Orthopaedically challenged learners

In our culture, people are obsessed with their bodies. Everyone wants to be beautiful and well formed – attractive to others. It's not surprising then that people with disabilities must fight two battles – the battle to fight their ailments and the battle to be accepted by others. Individuals with physical disabilities have **physical limitations** or **health problems** that **interfere with attendance or learning** to such an extent that special services, training, equipment, materials, or facilities are required. These individuals may also have other disabilities, such as mental retardation and emotional or behavioral disorders. Even so, the **medical nature** of the problem highlights the need for interdisciplinary cooperation in special education. Today, because of advances in medical technology, more individuals with severe disabilities are surviving and many more are living with disease or injury with mild impairments, such as hyperactivity and learning disabilities. Technically, orthopaedic impairments may be defined as impairments caused by **congenital anomaly**, impairment caused by **disease** (polio, bone TB, etc) and impairments from **neurological causes** (**cerebral palsy**, **TBI**) and **musculo skeletal causes**.

An increasingly frequent cause of **neurological impairment** is traumatic brain injury (TBI), which may range from mild to profound. Medical and educational personnel must work together as a team to provide transition from the hospital or rehabilitation center to school. Frequent educational problems are focusing or sustaining attention, remembering, and learning new skills. Emotional, behavioral, and social problems may also be apparent. Because of its nature, traumatic brain injury became a separate category of disability under IDEA, in 1990.

Cerebral palsy (CP)—a condition characterized by paralysis, weakness, poor coordination, and/or other motor dysfunction is yet another widespread problem which accounts for a majority of individuals with physical impairments. It is non progressive brain damage that occurs before or during birth or in early childhood. Classification of CP is generally made according to the limbs involved and the type of motor disability. The educational problems associated with CP are varied because of the multiplicity of symptoms; a careful clinical appraisal must be made of each individual to determine the type of special education needed.

Recurrent seizures (partial or generalized) caused by abnormal discharges of electrical energy in the brain are referred to as **epilepsy**. Most individuals with seizure disorders are able to function normally, except when having seizures. However, intelligence is not directly affected by a seizure disorder, so educational procedures consist chiefly of attaining knowledge of the disorder and how to manage seizures, as well as commitment to help dispel the ignorance and fear connected with them.

A number of physical disabilities derive from musculo skeletal conditions, in which there are defects or diseases of the muscles or bones. Individuals with such disabilities have a range of difficulties in walking, standing, sitting or using their hands. **Muscular dystrophy** (one such disease) is a degenerative disease causing a progressive weakening and wasting away of muscle tissues. Progressive physical immobility and the prospect of total disability or death make this condition especially difficult to manage. However, intellectual capacity is not affected, and with proper motivation and educational procedures, most children with muscular dystrophy can benefit from regular or special education programmes. **Arthritis** is another disease that causes acute inflammation around the joints; its symptoms vary from mild to profound, and it affects children as well as adults. These and other musculo skeletal conditions do not cause lower intelligence, so educational considerations include overcoming the child's limited mobility so that he or she can continue learning in as normal a way as possible.

Individuals with neurological impairments have experienced damage to, or deterioration of the central nervous system. Their behavioral symptoms include mental retardation,

learning problems, perceptual-motor dysfunction, paralysis, seizures, and emotional or behavioral disorders. The causes of neurological impairments include infections, diseases, hypoxia, poisoning, congenital malformations, accidents, and child abuse.

Congenital malformations may involve any organ system and may range from minor to fatal flaws in structure or function. Some malformations are genetic (caused by faulty chromosomes), but the causes of many remain unknown. Fetal alcohol syndrome (FAS), which is now one of the most common causes of malformation and mental retardation, is caused by the mother's abuse of alcohol during pregnancy.

Accidents that bring about neurological impairment, disfigurement, or amputation are also an important cause of physical disabilities among children and youths.

Strategies for facilitation

Many physical disabilities, including those that result from accidents, substance use, and poisoning are fully preventable. **Preventing adolescent pregnancies** also would reduce the number of children born with disabilities. Teenage mothers are more likely than older woman to give birth to premature or low birth weight babies, and the babies of teens, remain at risk for developing a range of physical and psychological problems when they reach school age.

The reactions of the public, family, peers, and educational personnel, as well as the individual's own reactions to the disability are all closely interwoven in the determination of his or her personality, motivation, and progress. Given ample opportunity to **develop educationally, socially and emotionally in as normal a fashion** as possible, many individuals with physical disabilities are able to make healthy adjustments to their impairments. So a **healthy interface between the teacher, parent and the community** is needed.

Many individuals with physical disabilities use **prosthetics, orthotics, and other adaptive devices** to improve functioning. A prosthesis replaces a missing body part. An adaptive device aids a person's daily activity. Important considerations to be made in choosing prostheses, orthoses, and adaptive devices are simplicity, reliability, and the use of residual function.

Education for students with physical disabilities must focus on making the most of their assets. The student's individual characteristics (intellectual, sensory, physical, and emotional) must be considered when developing educational plans. Plans for young adults must include services for the family.

Along with scholastic education, the individual may need **special assistance in daily living, mobility, and occupational skills**. Consequently, many other disciplines may be involved. The major considerations are to help each individual become as independent and self-sufficient in daily activities as possible, to provide basic academic skills, and to prepare him or her for advanced education and work.

Career choice and sexuality are two primary concerns of youth with physical disabilities. Career considerations must include careful evaluation of the young person's intellectual, emotional and motivational characteristics, as well as physical capabilities. Young people with physical disabilities have the right to social relationships and modes of sexual expression afforded to others in society.

Academically challenged learners

These are those individuals, who have **difficulties remaining in the mainstream, unless the curriculum and pedagogy is modified for them**. They include.

- Slow learners,
- Under achievers and
- Learning disabled.

Let us now study about them in greater detail.

Slow learners

The slow learner is distinct from the mentally handicapped learner though he is often mistaken for it. A slow learner is an individual whose mental ability is high enough to justify keeping him in the regular classroom but low enough to give him considerable difficulty in keeping up with the average speed of the class. His I.Q. range falls into the 70-90 range, making him a border line case.

Characteristics of slow learners

Slow learners, because of their mental slowness either ask too many questions or withdraw completely from academic activities. They also become social isolates as their peers find them dull and boring. Slow learners, research has indicated, are slow in practically all aspects of development. They verbalize information in a diffuse manner, have poor co-ordination and get poor grades. They tend to lack self-reliance and their physical and social development is also inferior to that of their peers.

Strategies for facilitation

Development of an IEP for the individual based upon complete information gathered by the teacher is warranted. In fact, **mainstreaming or integrating** the individual in all other activities except academic activities is found to be beneficial.

The slow learner has difficulty in generalizing and transferring information from one lesson to another, thus if **task analysis** is used i.e. the subject matter to be learnt is broken down into small units and presented sequentially, it facilitates learning.

Furthermore, the **individual's mental age** rather than his I.Q. should be used to plan a special curriculum for him. The M.A. (mental age) allows us to know the age level at which the individual is operating intellectually.

The **attitudinal acceptance of the teacher** is a must. The teacher must realize that this mental insufficiency is not his fault. Similarly many of the problems that he manifests behaviorally result from his compensation for his disability.

Teachers should also help the **individual's peers to accept him**. Together they have to learn to lay emphasis on what the individual can do and not upon what he can't do.

Use of **criterion – referenced evaluation**, coupled with **innovative teaching methodology** keeps the child motivated and eager to learn. Provision of **remedial teaching or special coaching** to the slow learner helps him a great deal.

Underachiever

Broadly speaking, underachievement is defined as a **large discrepancy between the child's performance (at school) and his innate ability**. When a child with a high I.Q. level is performing poorly, he is said to be an underachiever. Similarly a child who is average intellectually, but whose performance is below average is also said to be an underachiever.

$$\text{Ability} > \text{Performance}$$

The equation of underachievement

Learner characteristics

Research studies and teachers' observations indicate that underachievers lack clear goals and values. They lack motivation, they are uninterested in work, have poor study habits, lack concentration, tend to day dream, fail to complete assignments in time, are unable to have consistent and dependable interpersonal relationships and may compensate for their inadequacy by being aggressive or timid.

Strategies for facilitation

It is usually seen that an emotional reason underlies underachievement, thus such an individual needs love, patience and care. **Individualized attention and counseling** has to be given to this child in order that he verbalizes his feelings and instills a sense of security and self worth in himself.

A healthy and conducive classroom atmosphere should be created which doesn't impose on or make excessive demands on the student – which gives him freedom to explore and space to grow and develop into a fully functioning individual.

Cognitive restructuring strategies can be used successfully with these students like count your blessings, thought stopping, negotiation etc.

Learning disabled

In the early 1960s, parents and professionals advocated a new category of special education – learning disabilities, to describe individuals who, in spite of normal or near normal intelligence, have a puzzling array of learning problems. What prompted the creation of this area was the realization that many children with learning problems were not receiving the needed educational services. The three most common factors in the definition of learning disabilities are

- IQ-achievement discrepancy,
- presumption of central nervous system (CNS) dysfunction,
- psychological processing problems, not due to environmental disadvantage, mental retardation, or emotional disturbance.

The National Joint Committee on Learning Disabilities (NJCLD) made up of representatives of several professional organization, has issued an alternative definition :

Learning disabilities is a general term that refers to a heterogeneous group of disorders, manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction and may occur across the life span. Although learning disabilities may occur concomitantly with other handicapping conditions, they are not the result of those conditions.

The prevalence of students identified as learning disabled has increased dramatically, more than doubled since 1976-1977. Some believe this growth indicates that teachers are too quick to label students as learning disabled; others argue that social-cultural factors (e.g., increased poverty, increased stress on families) have contributed to the growth of learning disabilities. Boys outnumber girls in the learning disabilities category by three to one.

Causal factors for learning disabilities fall into **organic and biological, genetic, and environment related categories**. More and more evidence is accumulating that many persons with learning disabilities have CNS dysfunction. Also, evidence is accruing that some cases of learning disabilities are attributable to genetic factors. Environmental causes have been more difficult to pinpoint, although some professionals believe that poor teaching can lead to learning disabilities.

Practitioners use tests of four general types to assess students with learning disabilities: **standardized achievement tests, informal reading inventories, formative evaluation measures, and authentic assessment**. Curriculum-based assessment is one such type of formative evaluation while authentic assessment methods, such as portfolios, evaluate students' critical—thinking and problem—solving abilities in real-life situations, often help in identification of learning disabled.

Learning characteristics

Persons with learning disabilities exhibit a great deal of inter-and intra individual variation in their psychological and behavioral characteristics. The inter individual variation is reflected in the heterogeneity of this population. Intra individual variation means that persons with learning disabilities often have uneven profiles of abilities.

Academic deficits are the hallmarks of learning disabilities. Reading disabilities are often related to poor phonological skills. Students with learning disabilities can also have problems in written or spoken language and math.

Some persons with learning disabilities have problems in perceptual-motor, or general coordination. Research has not documented the claim of early theorists that training in these skills would help resolve reading problems.

Between one-third and one-fifth children with learning disabilities have a higher prevalence of **attention deficit hyperactivity disorder (ADHD)**. There has been considerable controversy over whether the federal government should recognize ADHD as a separate category or whether the needs of students with attention deficits who have educational problems are met by existing categories such as learning disabilities. It is now recognized that ADHD can continue into adulthood.

Many individuals with learning disabilities also demonstrate memory deficits. They have cognitive problems that lead to a disorganization and metacognitive problems that interfere with their awareness of learning strategies and the ability to regulate their use.

Persons with learning disabilities tend to be rejected by their peers and to have poor self-concept. In addition, they can have motivational problems as demonstrated by an external locus of control and learned helplessness.

Some experts believe that a composite of many of the preceding characteristics indicate that many students with learning disabilities are passive rather than active learners. Many of their problems, such as a propensity to have problems with homework, may be due to this inactive approach of learning.

Strategies for facilitation

Educational methods for alleviating the academic problems of students with learning disabilities include **cognitive training** and **direct instruction**.

Cognitive training focuses on (1) changing thought processes, (2) providing strategies for learning, and (3) teaching self-initiative. Self-instruction, mnemonic keyword method, and scaffolded instruction, are all examples of cognitive training.

Direct instruction focuses even more directly on academics than does cognitive training. It concentrates on instructional processes and a systematic analysis of the concept to be taught, rather than on characteristics of the student.

Methods for the attention problems of students with learning disabilities are **structure** and **stimulus reduction, behavior modification, cognitive training, and medication**. A structured and stimulus reduction approach, emphasizes a highly teacher-directed approach combined with a reduction in extraneous stimulation. In behavior modification, the student's attention is rewarded and his or her inattention is ignored or punished.

Cognitive training for attention problems assumes that students can regulate their impulsive and inattentive behavior, by thinking about their behavior more carefully. An example of a cognitive training technique for attention problems, is **self-monitoring, self-evaluation** and **self-recording** of 'on-and-off' task behavior.

Medication can be highly effective for increasing the concentration of persons with ADHD, including adults. Because the medication is powerful, with some possible side effects, teachers, parents, and physicians need to work together to monitor its effects.

The resource room is the most common placement for students with learning disabilities. **Cooperative teaching**, in which regular and special education teachers work together in the regular classroom, is gaining in popularity. Students with learning disabilities are often seen as the most likely candidates for full-inclusion programmes, although many professionals and parent organizations have resisted overuse of this approach.

Exceptionality and the family

Nowhere is the impact of child who is exceptional felt more than in the family of which he is a part. The birth of an infant with disabilities may alter the family as a social unit in a variety of ways. Family and the society at large react with shock, disappointment, guilt, anger and even depression, further debilitating the individual by making him feel unwanted and uncared for. Family being the most important institution in one's life can help provide him with an emotional insulation – a buffer to safeguard his self concept and enable him to reach above, realize his potential and touch the stars as it were..

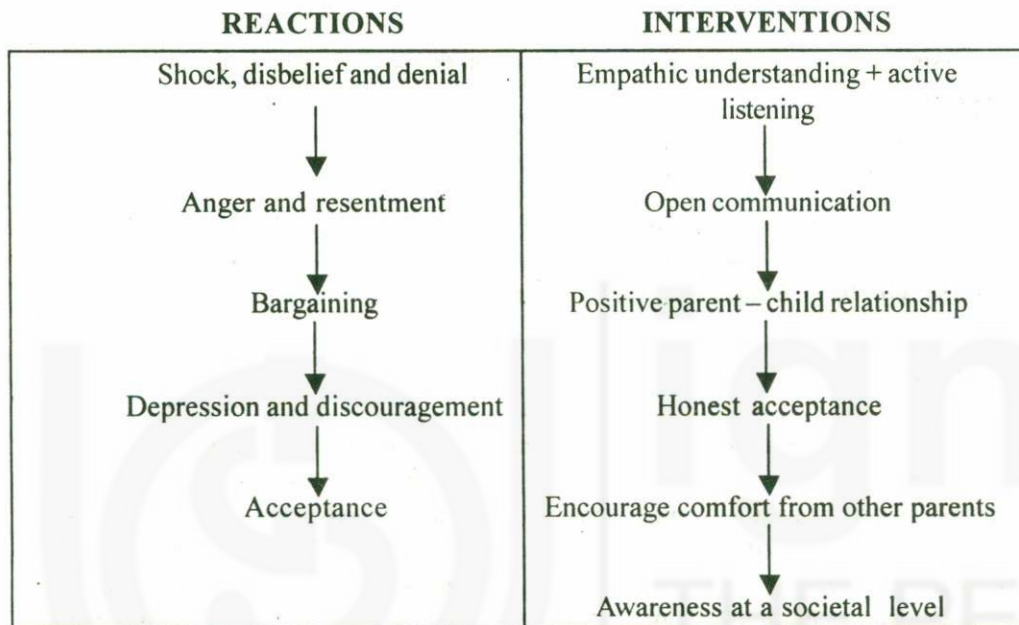


Figure 9 Potential parent reactions to exceptional children and possible interventions

Interventions in the social support system of an exceptional individual aim to provide a network with professionals who train them, enhance the care giving capacity of the family, bring about attitude reconstruction of the extended family, concerned neighbors and friends, deal effectively with the stresses of having an exceptional individual in the family and develop a support network with better quality of life for all family members.

Current family intervention practitioners advocate a **family focussed** or **family centered approach** in which the professionals work for families helping them to obtain nonprofessional (friends and families) as well as general sources of support. Two educational approaches for families to consider are :

Family systems approach : This model suggests that the disability as well as the impact of the family on the individual are determined by the complex interaction between factors such as the type of problem, severity of the problem faced, socio economic and educational status of the family, emotional stability of the family, psychological hardiness and cohesiveness of the family, determine how the family deals with the disability.

The social support systems approach : It stresses the importance of broader societal influence on family functioning. It emphasizes the role of informal sources of social support like extended family, religious groups, friends and neighbors upon family dynamics.

A particularly effective social support is that of **parent support groups** – groups made up of parents who have children with similar disabilities. Today, the Internet has also grown into an excellent resource for parents as well. A social systems program is built on the assumption that its better to enable families to help themselves than to provide only direct services to them.

Yet another approach to dealing with exceptionality in the family is the IFSP or the **individualized family service plan** – a plan for services for young children with disabilities under three years of age and their families drawn up conjointly by professionals and parents. It is similar to an Individualized Educational Plan (IEP) for older children.

- Enhancing the care giving capacity of the family.
- Giving parents and other family members respite from the demands of caring for the individual with a disability.
- Assisting the family with persistent financial demands related to the individuals disability.
- Providing valuable training to families concerned, neighbours and friends.
- Improving the quality of life for all members of the family.

Figure 10 Goals of family support system

Summary

Some individuals in one or more ways are different from the normal, average individuals, who account for most of our population, thus making them 'special' owing to their differential needs. Special education seeks to provide specially designed instruction to meet the unusual needs of an "exceptional" learner using specially designed materials, teaching techniques and facilities. An ongoing attempt is made to align special education into the mainstream, highlighting integration and enhancing inclusion of such children into the larger society.

This unit also showcases the different types / categories of special needs' learners like visually challenged, academically challenged etc. and spells out their defining characteristics and facilitation provisions.

The role of the family, as it tries to deal with the exceptionality of a child is of immense importance. The attitude of the family determines whether exceptionality is seen as stressful and humiliating, or a potential to be realized or a challenge to be overcome. As is rightly said – **Its All in the Mind that matters.**

Unit-end exercises

1. Imagine that you are a teacher working with a visually challenged learner. What decisions would you make for this individual to be successful? What instruction and strategies would you use?
2. Interview a special learner. Ask him about his experiences in college and society. Draw up a list of attitudes which need reconstruction.
3. Classify the following as myths or facts regarding special education and give reasons for your argument:

- People with disabilities are just like everyone else.
- Mainstreaming is effective for special learners and special classes are ineffective.
- Deafness is not as severe a disability as blindness.
- Parents are to be blamed for many of the problems of their children with disabilities.
- All children with Learning disabilities are brain damaged.
- Children with AIDS do not fall in the category of special learners.

Suggested readings

Hallahan, D.P.; Kauffman, J.M. (1997) *Exceptional Learners – An Introduction to Special Education*, (7th Edition), Boston : Allyn and Bacon.

Hardman, M.L., and Drew, C.L. (1996) *Human Exceptionality Society, School and Family*, (5th Edition), Boston : Allyn and Bacon.

Ranganathan, N. (2000) *The Primary School Child : Development and Education*, (1st Edition), New Delhi : Orient Longman.

Yesseldyke, J.E.; Alozzine, B. (1998) *Special Education : A Practical Approach for Teacher*, (1st Edition), New Delhi : Kanishka Publishers.

12

Strategising Teaching and Learning : Models of Teaching and Contemporary Approaches

Introduction

In the earlier three units you were acquainted with how we learn, the various approaches to learning and some of the strategies to optimize learning. In the current unit, different models of teaching are being discussed. We have cast each model as a way of teaching students to learn facts, concepts, skills, analysis of values and also to enable them to use the strategies suggested by each model and develop particular ways of thinking. This is a way of helping students to expand their styles of approaching problems in the present and in the future.

Learning outcomes

After working through this unit you will be able to :

- understand the concept of models of teaching;
- know the different models of teaching;
- examine the applicability of the different models of teaching;
- identify the various contemporary strategies used in the teaching - learning process.

Models of teaching : concept and importance

Colleges and their classrooms are communities of students brought together to explore the environment and learn how to navigate it productively. We have high aspirations for these groups of our society. We hope that members will become highly reflective and analytical, understand the social world around them, be devoted to its improvement and develop a sense of dignity, self esteem. These fundamental goals of education are central to the study of teaching and set the mandate for schools and colleges, alike.

In this unit we seek to describe a variety of approaches to teaching and understand and examine their applicability. You will see that there are many powerful models of teaching designed to bring about particular kinds of learning and to help students become effective learners. As educators, we need to be able to identify these models and select the ones we think we can optimally use in order to develop and increase our own effectiveness. Not only do models of teaching aim to enhance our competence in the use of teaching strategies; they also help us to become better learners.

Models of teaching are really **models of learning**. As we help students acquire information, ideas, skills, values, ways of thinking and means of expressing themselves, we are also teaching them to learn. In fact, the most important outcome of instruction may be students' increased capabilities to learn more effectively in the future, both because of the knowledge and skill they have acquired and because they have mastered the learning processes.

How teaching is conducted has a large impact on student's abilities to educate themselves. Successful teachers are not simply charismatic, persuasive or expert presenters. Rather, they present powerful cognitive and social tasks to their students and teach the students how to make productive use of them. Thus a major goal in teaching is to create **effective learners** who draw information, ideas and wisdom from their teachers and use learning resources optimally.

All the models discussed in this unit, seek to enhance the abilities of the student to **achieve various learning objectives**. Thus in a very real sense, increasing aptitude to learn is one of the fundamental purposes of models of teaching. Students are likely to change as their repertoire of learning strategies increases and they will be able to accomplish more and more types of learning more effectively.

Models of teaching thus serve as tools which **influence the capabilities and strength** of our learners. They are evaluated not only by how well they achieve the specific objectives to which they are directed but also by how they increase the ability to learn. Let us now try to understand each of the models.

Self-assessment

1. *Think of two difficult concepts which you were able to teach your learners well. Identify the strategies and techniques which you used for them. Try to envision whether these strategies could be used by other teachers as well, or become 'models' for them to follow.*

Information processing models

Information processing models emphasize ways of enhancing the human being's innate drive to **make sense of the world**, by **acquiring and organizing data, sensing problems, generating solutions** to them and developing concepts and language for conveying them. Some models provide the learner with information and concepts; some emphasize concept formation and hypothesis testing, and still others generate creative thinking. A few are designed to enhance general intellectual ability. Many information processing models are useful for studying issues of self and society and thus for achieving the personal and social goals of education.

Some of the important information processing models are briefly described below :

Concept attainment model

The concept attainment model as developed by American psychologists (Bruner, et al, 1967) visualizes our environment to be a complex, consisting of innumerable objects, events and phenomena. According to this model, in order to cope with this environment, we engage in the **process of categorizing** in which we respond to the objects, events and phenomena in terms of class membership, rather than their uniqueness. In other words, we invent categories and form concepts. Categorization is the basic thinking process as it helps us reduce the complexity around us. This process of categorization has two components namely :

- concept formation and
- concept attainment

Concept formation is the act by which new categories are formed, while concept attainment is the search for and listing of attributes (salient characteristics), that can be used to distinguish exemplars from non-exemplars of various categories. In other words, concept formation requires the students to decide the basis on which they will build categories. Concept attainment requires a student to figure out the attributes of a category that is already formed, in another person's mind by comparing and contrasting examples that contain the characteristics of the concept (called attributes), with examples that do not contain those attributes.

The concept attainment model is highly useful in introducing extended series of inquiries into important areas. It can also augment the ongoing inductive study. This model may be used with students of all ages and grade levels. The concept attainment model is an excellent tool for evaluation, when teachers want to determine whether important ideas introduced earlier have been mastered, since it quickly reveals the depth of students' understanding. With abstract concepts, the strategies nurture an awareness of alternative perspectives and a sensitivity to logical reasoning.

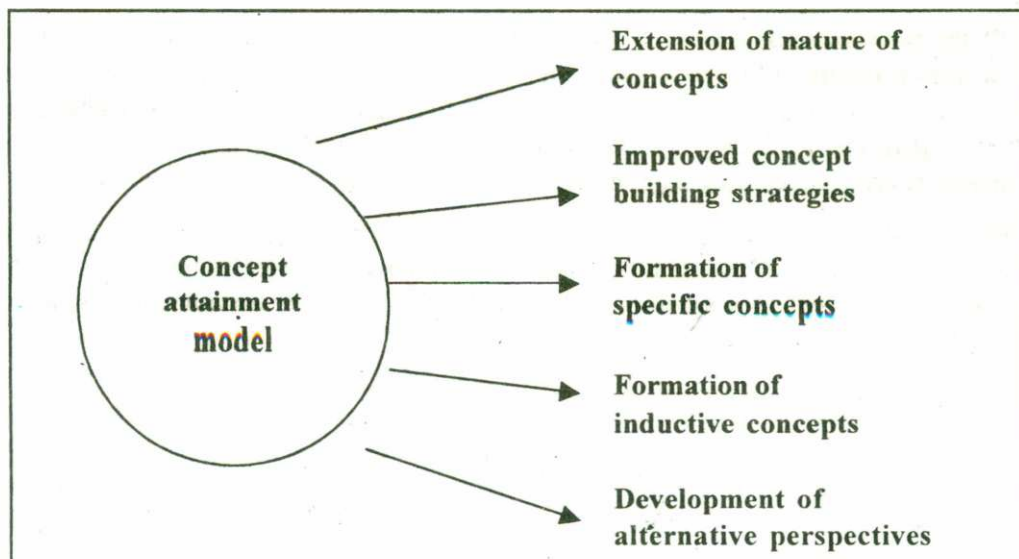


Figure 1 · Learner gains from concept attainment model

Self-assessment

2. *In your own subject area, think of how you could use this model in different areas to achieve one or more of the learning gains from this model.*

Inquiry training model

The inquiry training model originated with a belief in the development of **independent learners**. Students are usually curious and eager to know and make sense of the world around them. The inquiry training model capitalizes on their natural zeal for energetic explorations, giving them specific directions, so that they explore new areas more forcefully. The inquiry training model was developed by Richard Suchman to teach students a process for investigating and explaining unusual phenomena. This model is the outcome of the analysis made of the methods employed by physical scientists. According to this model, inquiry training begins by presenting students with a puzzling event. Suchman believes that individuals faced with such a situation are naturally motivated to solve the puzzle. We can use the opportunity provided by natural inquiry to teach the procedures of disciplined searching, using a vast number of strategies involving sequencing, ordering and simple experimentation.

The inquiry training model can be used in all subject areas, although the construction of puzzling situations is a critical task because it transforms curriculum content into problems to be explored. Furthermore, this model promotes strategies of inquiry and attitudes like tolerance of ambiguity, tentativeness of knowledge and encourages autonomous learning. This model is adaptable to all levels of learning.

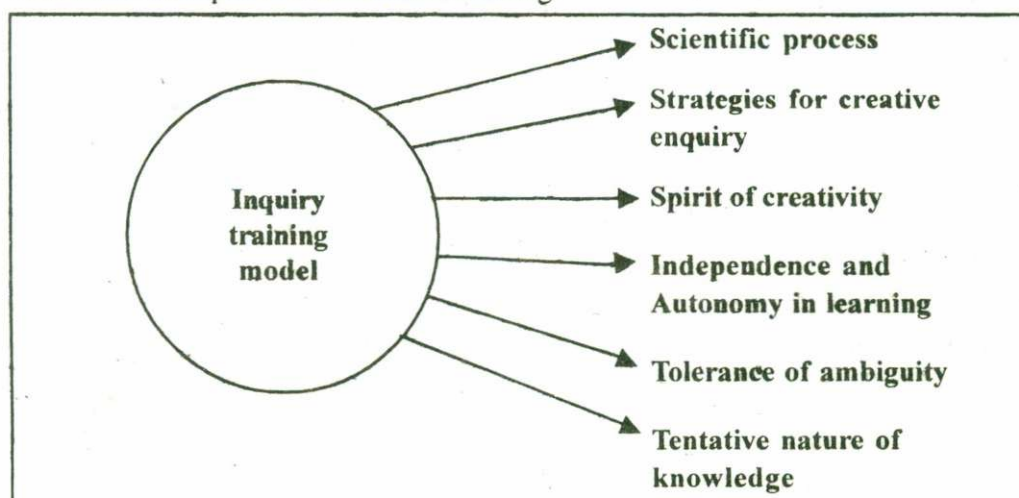


Figure 2 Features of the inquiry training model

Self-assessment

3. *Develop a resource bank of puzzling situations and tasks which your students would enjoy solving through this model. Your frame of reference may be your academic subject and social issues.*

Advance organisers model

This model, developed by David Ausubel is aimed at helping teachers organize and convey large amounts of information as **meaningfully** and as **efficiently** as possible. According to this model, the teacher organizes the subject content and presents information through lectures, readings and designing tasks for the learners to integrate what they have learned. The learner's primary role is to **master ideas** and **information**. Contrary to the inductive approaches which lead the students to discover and rediscover concepts, the advance organizers, provide concepts and principles to the students directly.

The advance organizers model is designed to strengthen students **cognitive structures**, a term Ausubel uses for a person's knowledge of particular subject matter at any given time and how well organized, clear and stable it is (Ausubel, 1963). According to him, there is a parallel between the way subject matter is organized and the way people organize knowledge in their minds. He expresses the view that, each of the academic disciplines has a structure of concepts that are organized hierarchically, with more abstract concepts at the top and concrete ones at the lower end. This model rests on the premise that, our mind is an information processing system akin to the conceptual structure of an academic discipline. Like the disciplines, the mind is a hierarchically organized set of ideas that provides anchors for information and ideas and serves as a storehouse for them. Ausubel maintains that new ideas can be learnt and retained, to the extent that they can be related to already available concepts or propositions, that provide ideational anchors.

The advance organizers model enables the learners to develop habits of **precise thinking** and undertake **meaningful assimilation** of information and ideas. It helps them to interrelate and integrate the material in the learning task with previously learned material.

Self-assessment

4. *Develop some concept hierarchies in your subject area and transact your class through the procedure suggested by this model.*

Models of intellectual development

Models, based on studies of student's intellectual development (Kohlberg, 1976; Piaget, 1952; Sigel, 1969; and Sullivan, 1967), are used to help us **adjust instruction** to the **stage of maturity** of an individual student and to design ways of increasing the student's **rate of development**. The long term goal of such models is to teach students to think effectively. They rest on the assumption that matching curriculum to the students' stage of development and appropriately organized instruction can accelerate intellectual development. Piaget, a major proponent of this approach, maintains that human beings develop increasingly complex levels of thinking in definite stages. Each stage is characterized by the possession of certain concepts or intellectual structures called **schemes**. An individual uses these schemes as he interacts with the environment. While interacting, new experiences are incorporated into the present patterns of behavior which Piaget called as the **process of assimilation**. When the cognitive structure is changed, to fit the new experience that occurs, it is termed as the **process of accommodation**. Constantly, through the process of accommodation and assimilation, cognitive activities are undertaken as per one's developmental progress.

Alternatively, this model suggests the idea of **optimal mismatch** i.e. by pitching instruction slightly above the current level of the students, enabling them to push their way towards the next stages; an idea originally put forth by Vygotsky's **zone of proximal development**.

Research has indicated that this model is particularly useful for young adults and specially for children from socially, emotionally and economically disadvantaged backgrounds.

Self-assessment

5. *Think of all the students you know who have problems with learning. Using this model, develop strategies to reach out to them.*

Personalized models of teaching

Ultimately human reality resides in our **individual consciousness**. We develop **unique personalities** and see the world from perspectives that are the products of our **experiences** and **positions**. Common understandings are a product of the negotiations of individuals who must live, work and create families together.

The personal models of teaching-learning begin from the perspective of the **selfhood of the individual**. They attempt to shape education so that we come to understand ourselves better, take responsibility for our education and learn to reach beyond our current development, to **become stronger, more sensitive and self aware** in our quest for high quality lives.

One the most widely used models within this approach is the non-directive teaching model. Let us try to understand it.

Non-directive teaching model

The non-directive teaching model focuses on **facilitating learning**. The primary goal of non-directive teaching is to assist students in attaining **greater personal integration, effectiveness** and **a realistic self appraisal**. A related goal is to create a learning environment conducive to the process of stimulating, examining and evaluating new perceptions.

This model draws on Roger's stance toward **non directive counseling**, in which the client's capacity to deal constructively with his own life is respected. When operating non-directively, the teacher attempts to see the world as the student sees it. This creates an atmosphere of **empathic communication** in which the student's self-direction can be matured and developed. The primary means used is the non-directive interview strategy, a mode in which the teacher mirrors student's thoughts and feelings. The teacher in this mode gives up traditional decision-making roles, choosing instead a role of the facilitator who focuses on students' feelings. The relationship between a student and a teacher in a non-directive interview is best described as a partnership.

The non-directive teaching model may be used for several types of problem situations: personal, social and academic. It is designed to promote self awareness and independence, enhance one's self concept, reflected in the establishment of '**open**' classrooms. It aims at flexibility in learning, group work, creative self expression and qualitative evaluation.

Study figure 3 presented below. It illustrates the phases of personal growth in the non-directive process. You will be able to appreciate the movement of the individual from catharsis to new insights and perceptions, to commitment to taking responsibility and action.

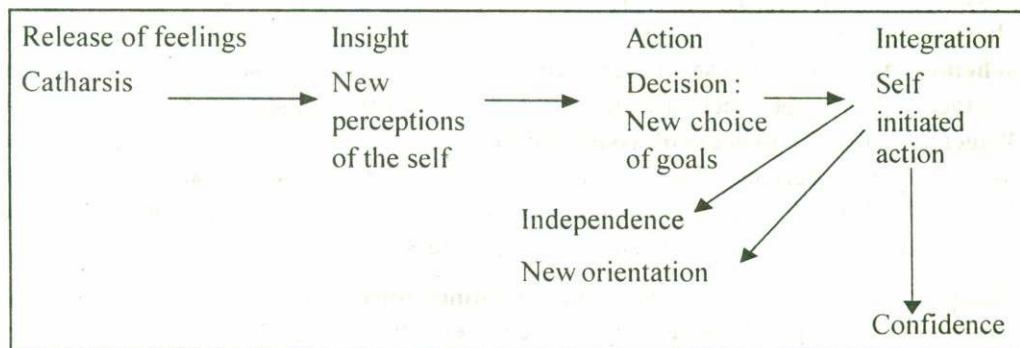


Figure 3 Phases of personal growth in the non-directive process

When this approach is utilised in classroom teaching, it leads to a number of benefits for the learner and requires that the teacher becomes a facilitator and not a director of students' learning. This may be presented diagrammatically as follows:

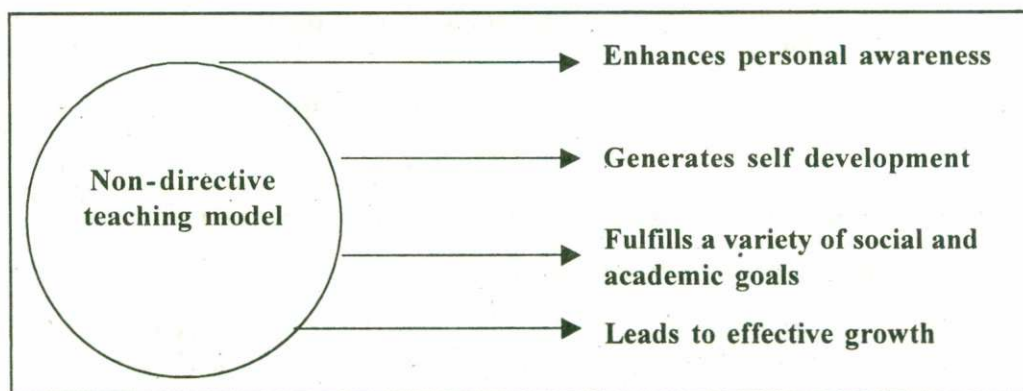


Figure 4 Benefits from the non-directive teaching model

Self-assessment

6. List out the characteristics of a non-directive teacher, based on the understanding which you have derived.
7. Draw up a profile of classroom where the non-directive approach is being followed.

Behavioral models of teaching

In this section we will discuss the behavioral models of teaching which have evolved from the classical conditioning experiments of Pavlov (1927), the work of Thorndike on reward learning (1911, 1913) and the influence of Skinnerian principles on human behavior (1953). You have already studied about all these in the previous units. The models of teaching in this category rest on the belief that all behavior is **observable**, **identifiable**, and contingent upon the **variables in the environment**. It can be modified through learning principles.

Let us now try to understand some of the behavioral models of teaching.

Direct instruction

The term direct instruction has been used by researchers, to refer to a pattern of teaching, which consists of the teacher **explaining** a new concept or skill, to a large group of students, having them test their understanding by practicing under his/her direction (**controlled practice**) and encouraging them to participate in their own seats under his/her guidance (**guided practice**). Because the model is **highly structured** and **teacher-directed**, it can flourish only in an environment which supports a traditional educational approach wherein the teacher is in control and shapes the learning of his/her students.

The model is, as the name suggests, **direct**. It approaches academic content, systematically. Its design is shaped to generate and sustain motivation through **pacing** and **reinforcement**. Through success and positive feedback it tries to enhance one's self esteem. As a model, it is highly structured. The role of the teacher, according to this model is to provide the **knowledge of results**, help students pace themselves and **reinforce desirable behaviors**.

The direct instruction model plays a limited, but nevertheless important role in a comprehensive educational programme. Research on direct instruction indicates that this approach is effective in promoting student learning in reading and math, especially for students from lower socio-economic backgrounds.

Figure 5 presents the learning gains to students from the direct instruction model.

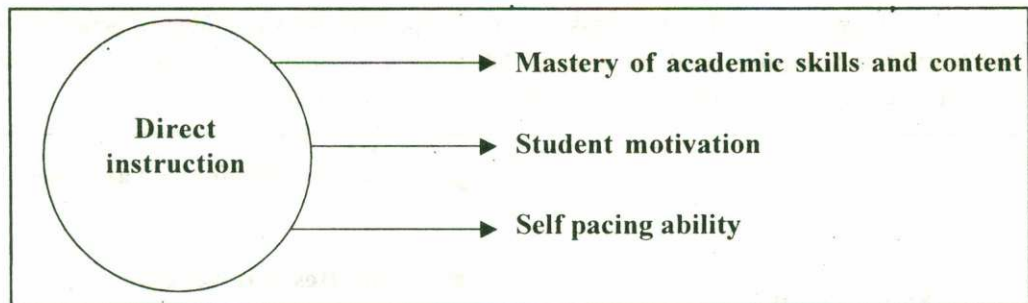


Figure 5 Implications of the direct instruction model for learners

Contingency management model

The contingency management model like other behaviorist models, perceives human behavior as a function of the **immediate environment**, specifically, an eliciting stimulus and a **reinforcing stimulus**.

The contingency management model, we can thus say, is based on the operant principle that all behavior is influenced by consequences that follow. It may otherwise be described as the **systematic control of reinforcing stimuli**, such that it is presented at selected times and only after the desired response has been given.

The ultimate goal of this model is **transferability** of the behaviors to new situations, which are similar in nature. Also implicit in this goal is **durability**; the new adaptive behaviors will become intrinsic, remain under the individuals self control and become self monitored.

The contingency management model has many uses. These include reducing **undesirable** or **maladaptive behaviors**, like aggression, depression etc. This model is also valuable in developing new **skills**, such as social skills, academic skills and self management skills etc. It also helps in **altering emotional responses** like eliminating anxiety, curing phobias etc. In implementing the contingency management model, there are a set of steps and techniques which are typically followed. These are presented in figures 6 and 7, respectively.

- Specifying a final performance
- Assessing entering behavior
- Formulating a program
- Instituting the program
- Evaluating the program

Figure 6 Steps in implementing the contingency management model

● Shaping	Reinforcing each small step of progress toward a desired goal or behavior.
● Positive practice	Practicing correct responses immediately after errors.
● Token reinforcement system	System in which tokens earned for academic work and positive classroom behavior can be exchanged for some desired reward.
● Contingency contract	A contract between the teacher and an individual student specifying what the student must do to earn a particular privilege or reward.
● Time out	Technically, the removal of all reinforcement. In practice, isolation of a student from the rest of the class for a brief time.

Figure 7 The various techniques of contingency management

Self control model

The activities of the self control model are similar to those of contingency management (discussed previously), with the major differences occurring in the orientation of the learner to the strategy and the social system i.e. in initiating and having responsibility for carrying out the model. In this model, the onus of responsibility lies upon the individual.

One of the main reasons for moving towards a self control model is that for many behaviors, the environment is unlikely to provide incentives at the rate and time that the individual actually needs them, to establish the new behavior. Studying, exercising, playing the piano and assertive social behavior are some such examples. Consequently, it is important that the person has ways of rewarding himself or herself in order to monitor and regulate his behavior, so as to eliminate undesirable or maladaptive behaviors.

The structure of such models is moderate to low. Although the instructor is important in initiating the possibility of the program, the student ultimately has control over the situation and maintenance of activities, many of which are carried out without the supervision of the teacher.

This model not only targets maladaptive behaviors by eliminating them, but also has powerful nurturant effects. It teaches individuals that they can control their environments and themselves and this enhances self-esteem. It also encourages people who perceive the world from a behavioral point of view, to note the stimulus and reinforcements, in their interactions with people and things.

The advantages which accrue to the learner from this model, are presented in Box 8.

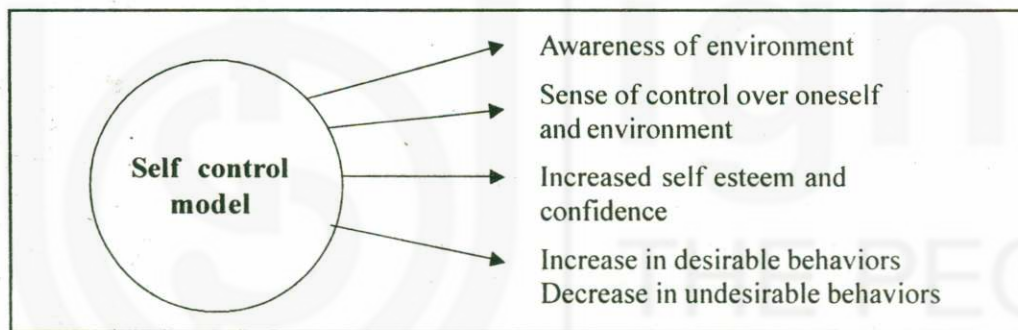


Figure 8 Learner implications of self control models

Self-assessment

8. Evaluate the three behaviouristic models which you have read. Which among these do you think is the most desirable for college classrooms and why?

Let us now try to consolidate all the models of teaching, which you have been exposed to, into a comprehensive summary figure :

Approach	Salient features	Teacher's role	Outcomes
Information processing approach	To teach students the skills of learning through thinking. To increase students' ability to seek and master information, organize it, build it, test hypotheses and apply this learning in their exploration of self and the world around them.	To organize and convey information as meaningfully and effectively as possible. Teacher could use methods like demonstrations, lectures, readings etc.	Development of higher order cognitive skills like reasoning, induction, concept formation Development of alternative perspectives,

			independence and autonomy in learning.
Personal models of teaching	All individuals are essentially capable of making their own decisions / dealing constructively with their life. People are only temporarily deflected from their path. People are full of potential and are innately driven to realize this potential	To be a facilitator To create an atmosphere of empathetic communication, understanding and regard in the classroom The teacher allows the student to grow at his own pace and respects his individuality.	The students are able to develop personal awareness. Results in affective growth and self development Realization of one's potential which is reflected in a variety of social and academic goals
Behavioristic models of teaching	All behavior is observable, identifiable and contingent upon the variables in the environment; can be modified through learning principles.	To use reinforcement judiciously to delete undesirable behaviors and sustain desirable behaviors. To develop new skills and behavior In learning, using techniques of behavior modification	Development of desirable and adaptive behavior Development of self management skills

Figure 9 Summary of the various models of teaching

Self-assessment

9. Try to visualize various ways in which you can combine different models of teaching to create a better learning environment in your classroom.
10. Do you think the specific goals of teaching in a particular class should determine your choice of model, or should choice of model determine the goals of teaching?

Contemporary approaches to teaching

The teaching-learning process has been conceptualized by psychologists in a variety of ways. The understanding about the nature of the learner also shows wide variations in interpretation. Given the existence of these, a number of more contemporary approaches to teaching have come up. These typically are in the form of strategies and do not propose entire models of teaching. Let us take a look at some of them.

Brainstorming

This is based on the principle of drawing out as many ideas as are possible on a particular issue or theme. Brainstorming is meant to overcome pressures for conformity in the interacting group that retard the development of creative alternatives. It accomplishes this by utilizing an idea – generation process that specifically encourages any and all alternatives while withholding any criticism of those alternatives. From all the ideas which surface, the role of the teacher is to build up a suitable conceptual framework for the learners.

Visualization in the participatory process

Visualization in the participatory process is the written counterpart of the process of brainstorming wherein, the aim is to generate as many ideas from students as possibly could be. It uses an experiential mode in which, participants based on their prior experiences, ‘free wheel’ ideas which they deem important. The operational steps of visualization in the participatory process are as follows :

A topic or issue of study/discussion is announced.

Participants are given a slip of paper and a felt pen and are asked to write one idea related to that topic per slip. They can generate as many ideas as they wish. At the end of the allocated time, all the ideas so generated are collected and discussed. This method assures confidentiality to the participants and also ensures maximum involvement of the group. The teacher functions as a facilitator and helps to present all the ideas and views in a perspective.

Role play

It involves the enactment of an identified theme. It is an excellent technique for expanding participants’ awareness and showing them alternative behaviors. At its simplest level, role playing is dealing with problems through action. A problem is identified, acted out and discussed. The essence of role playing is the involvement of participants and observers in a real problem situation and the desire for resolution and understanding that this involvement engenders. It allows the learners to :

- explore their feelings
- gain insight into their attitudes, values, perceptions
- develop their problem solving skills
- explore subject matter in various ways.

The teacher must engage the class in a meaningful follow-up discussion after the role – play to ensure that learning has taken place.

Case vignettes

These are brief case exemplars of persons, events or situations which the teacher wants a particular group of students to analyse or discuss. They are very useful in tapping students’ analytical, reflective and problem solving skills. They motivate learners greatly, lead to a variety of insights being developed and lend themselves to group work very well. Because they involve inductive processes, they usually lead to better formation of ideas and concepts.

Focus group tasks

Originally known as the ‘focus group interview technique’, it aims to gather information from a number of persons their perceptions, ideas, opinions, beliefs etc. on different topics and issues. The assumption behind this type of approach is that in a group, people tell more or give a deeper understanding of what they think or feel about a specific topic. It is also a non-threatening situation.

Focus group tasks are useful in building up collective insights and arriving at a common shared understanding

- 7–10 voluntary members who participate.
- Group members share a commonality.
- The data generated are qualitative
- The moderator steers the discussion, probes selectively
- and maintains the focus of the discussion.

Figure 10 Characteristics of a focus group

Content analysis

Content analyses can be described as a collection of a variety of methods for analyzing a discourse, message or document for varying themes, ideas, emotions, opinions etc. Most such analyses consist of sophisticated counting schemes in which the frequency of particular words, phrases and affective expressions are determined. Apart from this, content analysis can also be theme based wherein themes expressed by the majority become the ways of knowing or learning. Through content analysis, a space is created for individual differences, as well.

Task analysis

This is an important approach for teaching individuals. It warrants that the original task to be broken into a consecutive series of subtasks, so as to enable the learners to understand better and faster. Task analysis is particularly effective when complex concepts have to be learnt.

Cooperative or group learning

This approach is based on the assumption that when learning takes place collectively, it is more effective, since cooperative settings generate more motivation, synergy, etc. Group members learn from each other, there is a feeling of co-operation and connectedness with the group and division of labour. This brings about task specialization leading to greater productivity and efficiency. Group learning can be used in any subject area, but requires that the tasks allocated to the groups, be purposeful in leading to the desired targets.

Do-it-yourself

The do-it-yourself approach includes the use of worksheets, quizzes, puzzles and board displays, wherein the learners are required to discover and learn by doing these activities themselves. Various subjects can be taught through this approach. Learners' potential, creativity, resourcefulness and application skills are tapped through these activities.

Intensive interactive workshops

Workshops entail practical work for a group of students for a period ranging from a few days to several weeks; where the work completed by the student is self paced, the nature of the methodology is experiential and interactive, content is qualitatively enriched and leads to idea generation. A workshop may be envisioned as a seminar, symposium, academic forum or a sensitization podium. There is considerable space for individual participation in a group situation is responsible for generating considerable work and progress.

Summary

In this unit, various models of teaching have been discussed ranging from information processing, personal models and behavioral to the more contemporary approaches to

teaching in the classroom. It must be remembered, that a model of teaching is not a fixed or unchangeable teaching formula which is unresponsive to the learning styles of students. On the contrary, models of teaching offer broad paradigms which interact with individual styles of learning to enhance the comfort and effectiveness of learning.

Unit-end exercises

1. You are a teacher of Science. Which approach / model of teaching seems most suitable to you and why?
2. How important do you think is the interface between the learning
3. You are a language teacher in a college. You want to develop creative writing skills among your students. Which methods and approaches will you use and why?
4. Information processing models, personal models and behavioristic models reflect the head, the heart and the hand respectively. Comment.

Suggested readings

Eggen Paul and Kauchak Don (1999) *Educational Psychology*, New Jersey: Prentice Hall.

Hamacheck Don (1990) *Psychology of Teaching, Learning and Growth*, Boston : Allyn and Bacon.

Joyce, B. and Weil, M. (1996) *Models of Teaching*, Boston: Allyn and Bacon.

Woolfolk, Anita (2001) *Educational Psychology*, Boston: Allyn and Bacon.

NOTES

Unit-1 and exercises

Unit-2 and exercises

Unit-3 and exercises

Unit-4 and exercises

Unit-5 and exercises

Unit-6 and exercises

Unit-7 and exercises

Unit-8 and exercises

Unit-9 and exercises

Unit-10 and exercises

Unit-11 and exercises

Unit-12 and exercises

Unit-13 and exercises

Unit-14 and exercises

Unit-15 and exercises

Unit-16 and exercises

Unit-17 and exercises

Unit-18 and exercises

Unit-19 and exercises

Unit-20 and exercises

Unit-21 and exercises

Unit-22 and exercises

Unit-23 and exercises

Unit-24 and exercises



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

