LECTURE 12
FACILITATING COMPLEX THINKING

Learning Objectives

1. Understand forms of thinking
2. Measure creativity in classroom
3. Explore the concept of creativity in classroom
4. Select some strategies that can stimulate complex thinking in students

Forms of Thinking

The forms have distinctive educational purposes, even though they sometimes overlap, in the sense that one form may contribute to success with another form. Consider three somewhat complex forms of thinking that are commonly pursued in classroom learning:
(1) Critical Thinking,
(2) Creative Thinking,
(3) Problem-solving.

Critical Thinking

- Critical thinking requires skill at analyzing the reliability and validity of information, as well as the attitude or temperament to do so.
- The skill and attitude may be displayed with regard to a particular subject matter or topic, but in principle it can occur in any realm of knowledge (Halpern, 2003; Williams, Oliver, & Stockade, 2004).
- A critical thinker does not necessarily have a negative attitude in the everyday sense of constantly criticizing someone or something. Instead, he or she can be thought of as astute (smart, intelligent): the critical thinker asks key questions, evaluates the evidence for ideas, reasons for problems both logically and objectively, and expresses ideas and conclusions clearly and precisely. Last (but not least), the critical thinker can apply these habits of mind in more than one realm of life or knowledge.

Creative Thinking

- Creativity is the ability to make or do something new that is also useful or valued by others (Gardner, 1993).
- The "something" can be an object (like an essay or painting), a skill (like playing an instrument), or an action (like using a familiar tool in a new way).
- To be creative, the object, skill, or action cannot simply be strange; it cannot be new without also being useful or valued, and not simply be the result of accident.
- If a person types letters at random that form a poem by chance, the result may be beautiful, but it would not be creative by the definition above.
- Viewed this way, creativity includes a wide range of human experience that many people, if not everyone, have had at some time or other (Kaufman & Baer, 2006). The experience is not restricted to a few geniuses, nor exclusive to specific fields or activities like art or the composing of music.
- Especially important for teachers are two facts. The FIRST is that an important form of creativity is creative thinking, the generation of ideas that are new as well as useful, productive, and appropriate. The SECOND is that creative thinking can be stimulated by teachers' efforts.
- Teachers can, for example, encourage students' divergent thinking—ideas that are open-ended and that lead in many directions (Torrance, 1992; Kim, 2006).

- Divergent thinking is stimulated by open-ended questions—questions with many possible answers, such as the following:
- How many uses can you think of for a cup?
- Draw a picture that somehow incorporates all of these words: cat, fire engine, and banana.
- What is the most unusual use you can think of for a shoe?
- Note that answering these questions creatively *depends partly on* having already acquired knowledge about the objects to which the questions refer.
- In this sense divergent thinking depends partly on its converse, convergent thinking, which is *focused, logical reasoning about ideas and experiences that lead to specific answers*.

Problem Solving

- Somewhat less open-ended than creative thinking is problem solving, the analysis and solution of tasks or situations that are complex or ambiguous and that pose difficulties or obstacles of some kind (Mayer & Wittrock, 2006).
- Problem solving is needed, for example, when a physician analyzes a X-ray: a photograph of the foot is far from clear and requires skill, experience, and resourcefulness to decide which foggy-looking blobs to ignore, and which to interpret as real physical structures (and therefore real medical concerns).
- Problem solving is also needed when a grocery store manager has to decide how to improve the sales of a product: should she put it on sale at a lower price, or increase publicity for it, or both? Will these actions actually increase sales enough to pay for their costs?

Measurement of Creativity

Torrance has developed TWO types of creativity tests: verbal and graphic

- **Verbal Test**
  In verbal tests, a child is asked how, for example, a toy can be changed to make it more fun to play with or think of many uses of a tin as possible.
- **Graphic Test**

In the graphic test, a person may be given a number of circles and asked to create a different drawing from reach circle. The responses are then scored for originality (new responses), fluency (number opf responses) and flexibility (different responses).

LECTURE 13
FACILITATING COMPLEX THINKING

Learning Objectives

1. Understand forms of thinking
2. Measure creativity in classroom
3. Explore the concept of creativity in classroom
4. Select some strategies that can stimulate complex thinking in students

Creativity in Classroom

- According to social psychologists, creativity is a function of social and psychological environment. Creativity must be fostered because many social, environmental and economic problems require creative solutions.
- Teacher can promote creative thinking in their students by creating classroom environment for creative thinking.

- Often teachers consciously or unconsciously discourage creative ideas of students without realizing that they are doing so.
- Teachers are in excellent position to encourage or discourage creativity through acceptance or rejection of the unusual and the imaginative ideas of students.

Here are some ways to foster creativity in the classroom:

1. Accept and encourage divergent thinking. Expect and demand creativity from students. For instance, during class discussion, ask, "Can any one suggest a different way of looking at this problem?" Reward attempts are imperfect.
2. Tolerate disagreement. Ask students to support their dissenting (rebel) option. Make sure non-conforming students receive equal privileges and rewards. Find out something positive even in apparently stupid and irrelevant answers. Follow-up bad answers with questions to help student think through the problem.
3. Encourage students to trust their judgment. If students questions can be answered by them, rephrase the question and direct it back to the class. Strange and odd questions from students should not be discouraged.
4. Expose the class to creative models. Model creative thinking and creative problem solving by suggesting unusual solutions for class problems.
5. Provide opportunities for students to solve problems through brainstorming. The basic principle of brainstorming is to allow the students to give as many solutions to the problem as possible. Delay evaluation of those solutions till maximum number of solutions are given. Separate the processes of creating ideas and evaluating them. Simultaneous evaluation inhibits creative production.
6. Encourage students to think around the problem and give them time to produce divergent or lateral thinking solutions.
7. Minimize use of extrinsic rewards and stimulate students to find intrinsic satisfaction in their efforts.
8. When possible, allow students choices in writing stories, in science projects and other areas of interest. Use all curriculum areas to encourage creative thinking. Help them not only in seeking new solutions but also in finding new problems.

Instructional Strategies that Stimulate Complex Thinking

Teacher-directed Instruction

- As the name indicates, teacher-directed instruction includes any strategies initiated and guided primarily by the teacher.
- A classic example is exposition or lecturing (simply telling or explaining important information to students) combined with assigning reading from texts.
- But teacher-directed instruction also includes strategies that involve more active response from students, such as encouraging students to elaborate on new knowledge or to explain how new information relates to prior knowledge.

Lectures and Readings

- Lectures and readings are traditional staples of educators, particularly with older students (including university students). At their best, they pre-organize information so that (at least in theory) the student only has to remember what was said in the lecture or written in the text in order to begin understanding it (Exley & Dennick, 2004).
- Their limitation is the ambiguity of the responses they require: listening and reading are by nature quiet and stationary, and do not in themselves indicate whether a student is comprehending or even attending to the material.

- Educators sometimes complain that "students are too passive" during lectures or when reading. But physical quietness is intrinsic to these activities, not to the students who do them. A book just sits still, after all, unless a student makes an effort to read it, and a lecture may not be heard unless a student makes the effort to listen to it.

Advance Organizers

- In spite of these problems, there are strategies for making lectures and readings effective.
- A teacher can be especially careful about organizing information *for* students, and she can turn part of the mental work over to students themselves.
- An example of the first approach is the use of **advance organizers**—brief overviews or introductions to new material before the material itself is presented (Ausubel, 1978).
- Textbook authors often try deliberately to insert periodic advance organizers to introduce new sections or chapters in the text. When used in a lecture, advance organizers are usually statements in the form of brief introductory remarks, though sometimes diagrams showing relationships among key ideas can also serve the same purpose (Robinson, et al., 2003). Whatever their form, advance organizers partially organize the material on behalf of the students, so that they know where to put it all, as they learn them in more detail.

Recalling and Relating Prior Knowledge

- Another strategy for improving teacher-directed instruction is to encourage students to relate the new material to prior familiar knowledge. When one of us (Ali) first learned a foreign language (in his case French), for example, he often noticed similarities between French and English vocabulary. A French word for picture, for example, was *image*, spelled exactly as it is in English. The French word for *splendid* was *splendide*, spelled almost the same as in English, though not quite. Relating the French vocabulary to English vocabulary helped in learning and remembering the French.

Elaborating Information

- Elaborating new information means asking questions about the new material, inferring ideas and relationships among the new concepts.
- Such strategies are closely related to the strategy of recalling prior knowledge as discussed above: elaboration enriches the new information and connects it to other knowledge. In this sense elaboration makes the new learning more meaningful and less arbitrary or random.

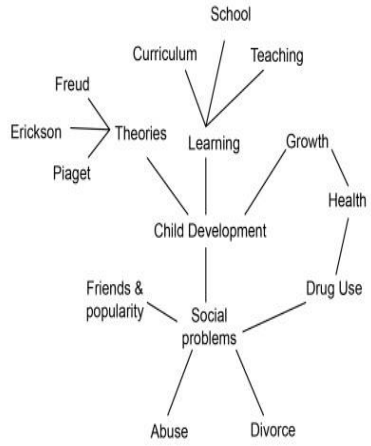
Organizing New Information

- There are many ways to organize new information that are especially well-suited to teacher-directed instruction. A common way is simply to ask students to outline information read in a text or heard in a lecture.
- Outlining works especially well when the information is already organized somewhat hierarchically into a series of main topics, each with supporting subtopics or sub points.
- Outlining is basically a form of the more general strategy of taking notes, or writing down key ideas and terms from a reading or lecture.

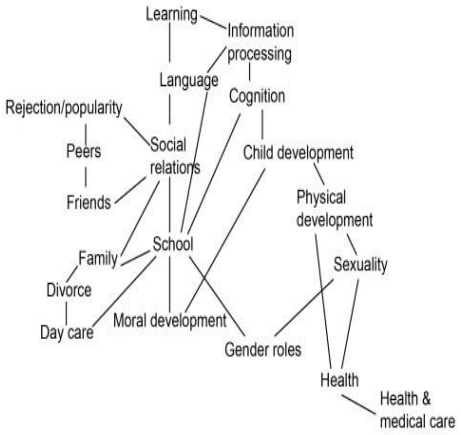
Concept Maps

- Graphic depiction of relationships among a set of concepts, terms, or ideas; usually organized by the student, but not always.
- A concept map or conceptual diagram is a diagram that depicts suggested relationships between concepts. It is a graphical tool that instructional designers, engineers, technical writers, and others use to organize and structure knowledge.

Concept Map by a Teacher



Concept Map by a University Professor



Benefits of Concept Maps

- Aids in Creating a Presentation
- Concept mapping can help someone creating a presentation to organize it in a logical format.
- Allows for Quick Interpretation
- With a concept map, people can often grasp ideas much more quickly than by reading them in an article or book
- Illustrates the Hierarchy of Ideas
- A concept map helps people to understand the hierarchy of ideas, understanding how each component relates to the others.
- Aides in Visualizing Outcomes
- It can also help people to understand the possible indirect results of an action or program.

Definitions of Terms

Lecture	Telling or explaining previously organized information—usually to a group
Assigned Reading	Reading, usually individually, of previously organized information
Advance Organizers	Brief overview, either verbally or graphically, of material about to be covered in a lecture or text
Outlining	Writing important points of a lecture or reading, usually in a hierarchical format
Taking Notes	Writing important points of a lecture or reading, often organized according to the learning needs of an individual student
Concept Maps	Graphic depiction of relationships among a set of concepts, terms, or ideas; usually organized by the student, but not always

LECTURE 14
INDIVIDUAL DIFFERENCES

Learning Objectives

- After taking this lecture students will be able to:
- Study characteristics of students with mental retardation and techniques of teaching them.
- Describe characteristics and classification of students with emotional disturbance.
- Summarize techniques of teaching aggressive and withdrawn children.
- Explore factors leading to the disadvantaged status of students. Give suggestions to teach them
- Discuss students with attention deficit hyperactivity disorder and the ways to help them learn.
- Discuss the characteristics of students with learning disabilities and techniques of teaching them.
- Describe ways to identify gifted children and methods of teaching them.
- Explain how computer can help teaching the exceptional child.

DEFINITION OF INDIVIDUAL DIFFERENCES

According to the dictionary of education

- Individual differences stand for the variation or deviations among individuals in regard to a single characteristic or number of characteristics.
- It is stand for those differences which in their totality distinguish one individual from another.

  So, we can say that individual differences is the differences among humans that distinguish or separate them from one another and makes one as a single unique individual.

TYPES OF INDIVIDUAL DIFFERENCES

Following are the types of individual differences

- **Differences in Interest**

  Interest may refer as a motivating force that compels us to attend to a person, a thing, or an activity. So in educational field differences in interest means you observe some students like a particular subject, teacher, hobby or profession than other.
- **Difference in Attitude**

  Difference in attitude is psyche related to some thing. Few learners have positive attitude towards a specific topic, subject, and profession than other. The role of education in society is to develop positive attitude.
- **Difference in Values**

  Values are the things that are given importance by an individual. Some learners value materialist life style other moral or religious life style etc. So education must mould the mind of young generation to have a balance values between materialism and spiritualism.
- **Study Habits**

  It is clearly observable that some students markedly differ from other students in study habits. Some students are studious and study all the subjects with interest but other may not. Some study in isolation and some in group.
- **Difference in Psychomotor Skills**

  Psychomotor Skill is related to some skill acquisition. Some students differ in this area also. Some students like football, other cricket, etc. Some students easily learn operating a machine and some may not. A wise teacher should diagnose students' psychomotor skills abilities and encourage them in that direction.
- **Difference in Self Concept**

Difference in self-concept is the totality of attitudes, judgment, and values of an individual relating to his behavior, abilities, and qualities. So some students have positive self-concept than boost their confidence level and perform better against those who have negative self-image.

CAUSES OF INDIVIDUAL DIFFERENCES

The followings are the main causes of individual differences:

1. Hereditary (Nature)

- Individuals have various abilities, and capacities provided by hereditary. Which decide the path of progress and development of an individual.
- Hereditary also put limits upon individuals' growth and development in various dimensions.
- Hereditary also contributes to both genders, intelligence, and other specific abilities.

2. Environment (Nurture)

- Environment also plays key role in individual differences. No person from birth to death gets the same environment. Individual differences occur on the basis of simulation received by individual from his or her internal and external environment. This may include family set up, peer group, economic statues, education etc.
- It is debatable that whether nature or nurture play vital or stronger role in development of an individual in specific direction. Both are strong contenders in order to distinguish one individual from other.

TYPES OF EXCEPTIONAL CHILDREN

The U.S. Federal Department of Health and Education has following types of children in the list of handicapped children:

(1) Deafness
(2) Hardness of hearing
(3) Blindness
(4) Visual impairments
(5) Speech impairments
(6) Physical and health impairments
(7) Mental retardation
(8) Learning disabilities
(9)Emotional disturbance

GIFTED AND TALENTED STUDENTS

According to a recent definition, gifted and talented children and youth give evidence of high performance capability in such areas as intellectual, creative, artistic or leadership capacity or in specific academic fields who require services or activities not provided by the school; in order to fully develop their capabilities.

Gallagher defined such individuals as those who possess the ability to absorb abstract concepts, to organize them more effectively and to apply them more appropriately than the average youngster.

IDENTIFYING THE GIFTED

Previously, IQ score of 140 and above was used to identify the gifted. But as traditional intelligence tests do not measure divergent or creative thinking, besides IQ, such characteristics as superior performance on achievement and aptitude tests, high level of motivation and evidence of creativity as measured by creativity tests and leadership ability as evidenced by observation are also used for identification purposes.

The following nine statements serve a useful guide to identify the characteristics of gifted children:

1. Who learn easily and rapidly.
2. Who use a lot of common sense and practical knowledge.
3. Who retain easily what has been heard.
4. Who know more about many things than other children.
5. Who use a large number of words easily and accurately.
6. Who recognize relationships and meanings.
7. Who are alert, keen observers and respond quickly.
8. Who are persistent and highly motivated on some tasks.
9. Who are creative, have often-unusual ideas or make interesting connections.

TEACHING GIFTED STUDENTS

1. Some educators believe that gifted students should be given accelerated promotions —

A. First form of acceleration is to move quickly through the classes or particular subjects. Class skipping (skipping one or more classes) in more often used. The

B. second form of acceleration is curriculum compression, allowing the gifted students to complete the work for more than one class during the regular school year.

C. The third way of acceleration is extending school year by the use of summer sessions. The fourth way is to allow the gifted to take college courses while still in high school.

2. Another method is providing enrichment, instead of acceleration.

- Enrichment means giving them additional, more sophisticated and more thought-provoking work while keeping them with their age fellows.
- Enrichment can be horizontal (giving more material at the same level of difficulty) or vertical (giving more advanced work of the same general type).

3. Encourage capable students to spend extra time in reading and writing, for example, writing book reviews with personal reactions, not a summary of the studied book reading biographies and autobiographies may also inspire these students to emulate great leaders.

STUDENTS WITH MENTAL RETARDATION

- The American Association on Mental Deficiency (AAMD) has defined mental retardation "as significantly below average intellectual functioning existing concurrently with defects in adaptive behavior, manifested during development period".
- Retardation was further divided into mild, moderate, severe and profound levels on the basis of IQ measurement.
- But, now, the classification of mental retardation is based on level of support needed by the mentally, retarded person.
- The levels in the increasing order of support are intermittent (short-term, low or high intensity support during life span transitions but not always required), limited (intense, consistent, over time support but not of intermittent nature), extensive (daily long-term support at least in some environments such as work or home) and pervasive (constant, intense support required in all environments).

CAUSES OF MENTAL RETARDATION

- The causes of mental retardation are physical (organic) or environmental.
- Fifty percent of all the cases of mental retardation can be prevented by better parental Care, improved nutrition, disease prevention for mothers and children and improved educational environment.

CHARACTERISTICS:

The children with mild mental retardation have the following common developmental characteristics:

1. They follow the same general pattern of development like normal children but differ in the rate and degree of development. Accordingly, they appear immature as compared to their age fellows.
2. They tend to oversimplify concepts.
3. They are unable to generalize from one situation to the other.
4. They have short memory and short attention span.
5. They have delayed language development.
6. They are inclined to concentrate on one aspect of learning institution and ignore nonessentials.
7. They tend to classify things on the basics of single feature only.
8. The mentally retarded adolescents may deal with concrete situations but may not be able to grasp abstract ideas, state and test hypothesis. In other words, they may go maximally upto the concrete operations stage of cognitive development.
9. They are more likely to experience frustration when they want to do but can't do the things their peer can do.
10. They tend to devaluate themselves, doubt their abilities and suffer from lack of confidence and low self-esteem.

LEARNING GOALS:

The, learning goals for students with mild mental retardation may be restricted to learning of 3Rs' (reading, writing and arithmetic) during elementary stage and-equipping them with useful vocational and domestic skills, literacy for living, health, self care and citizenship skills at secondary stage. The overall aim of educating them' should be to enable them live independently as a productive, self supporting members of society.

TECHNIQUES OF TEACHING:

The following guidelines for teaching are applicable to all those students, including the mentally retarded, who learn less rapidly than most of their classmates:

1. Determine the readiness for learning, no matter how little the child may previously know. The learner should be ready to learn the next step. Prepare the learner for new learning.
2. State and present the learning objective in simple words.
3. Base the specific learning objective on an analysis of the child's strengths and weaknesses.
4. Present the new learning material in small steps and provide the learner with enough practice in that step before moving to the next step. Make drill and practice as interesting and enjoyable as possible.
5. Do not skip steps. These children can't form conceptual bridge from one step to the other. They can't make connections between steps on their own. Make connections between steps explicit.
6. Present the same idea in many different ways.
7. Go back to simpler level if you see the student does not seem to follow, the next step.
8. As these students have short memory span, build over-learning into lessons. Periodically review the previously taught lesson.
9. As these children have small attention spans, deliver brief presentations.
10. Give them brief assignments that can be completed in short periods.
11. Present learning tasks with smaller number of elements, at least some of which are familiar to them.
12. Teach them practical concepts and skills which the students will need during adult life.
13. Be especially careful to motivate and maintain the attention of these students.
14. Focus on a few target behaviours and skills so that students have a chance to succeed.
15. Do everything possible to encourage a sense of self-esteem in these children.

16. Do not expect and demand less. Ask them questions, give them sufficient wait-time for answers, repeat questions, give clue and ask the same question in different ways.
17. Since these children are easily frustrated, avoid placing them in situations leading to frustration. When they seem to be close to their frustration limits, encourage them to participate in relaxing, change-of-pace pursuits or in physical activities.
18. Pay close attention to social relations so that they are accepted and can make and keep friends.

STUDENTS WITH PHYSICAL IMPAIRMENTS

Students with physical impairments may have deformities in bones and muscles who have to use such devices as special shoes, wheelchairs or crutches in order to participate in normal school programme. If the school building does not have such structural features which create difficulties for these children, there is no_ need to change the usual school activities for them.

Students with Hearing Impairments

The students with hearing problems show such symptoms as turning one ear toward the speaker, misunderstanding conversation especially when speaker's face can't be seen, inability to follow directions, looking confused or distracted at times, frequently asking for repetition, mispronouncing new words, complaining frequent earaches etc. There are two approaches, namely, the oral approach and the manual approach to help these children in communication and learning. Oral approach involves speech reading (lip reading) and training these students to use their limited hearing effectively. Manual approach includes sign language and finger spelling. Both approaches should be used in combination.

Students with Vision Impairment

The students with vision impairment show following signs:

They hold books either very close or very away from their eyes. They may roll their eyes frequently or complain eye burning or itching. Their eyes may be swollen or red. They may misread the board writing, describe their vision as blurred, may be sensitive to light or hold their heads at an odd angle. Any of these symptoms may be reported to the eye-specialist. Mild vision problems can be overcome with lenses. Students with low vision must use hearing and touch as predominant learning channels. For students with visual problems, the quality of print is often more important than size of the print.

Students with Speech Impairment

- These students cannot produce sounds -for effective speech. Two common speech impairments are articulation disorders and stuttering.
- Articulation disorders include substituting one so\und for another (thunthirie for sunshine) distorting a sound (shoup for soup) and adding a sound (idea of idea). Most children successfully pronounce sound when they are six to eight years old. Stuttering appears by age three and four. Stuttering may lead to embarrassment and anxiety for the victim. In about 50% of cases, it disappears by adolescence. If it continues for longer than a year, speech therapist may be consulted. The earlier the treatment, the better.

LECTURE 15
INDIVIDUAL DIFFERENCES

Students with Emotional Impairments

Children with emotional disturbance are also termed as children with social maladjustment and children with behaviour disorders. These terms are interchangeably used.

Definition and characteristics:

Only children of serious emotional disorders have been defined in American Public Law (PL 94-142) for Handicapped children who possess one of the following characteristics:

1. Inability to learn is not due to mental retardation, visual and speech impairments and health problems.

2. Inability to build or maintain satisfactory relationships with peers and teachers.

3. A general mood of unhappiness or depression.
4. Inappropriate types of feelings and behaviours under normal conditions.
5. Tendency to develop fears about personal and school problems. In other words, serious emotional disturbance is characterized by learning difficulties, poor social relations, depression, fears and inappropriate behaviours.

Classification:

- There are many classifications of emotionally disturbed children but the most popular one involves two basic patterns: aggressive behaviour and withdrawn behaviour.
- **Aggressive students** are often restless, uncooperative, negativistic and disobedient, sometimes cruel and full of hatred.
- **Withdrawn students**, by contrast, are generally shy, timid, anxious, often depressed, lack self-confidence, are more likely to develop various serious emotional problems like schizophrenia (being cut off from reality), depression and suicidal attempts during adolescence. Teachers are mostly unaware of withdrawn students because their behaviour, unlike the aggressive behaviour, does not force teachers' attention. If the emotionally disturbed pupil behviour becomes very severe, placement in separate, special class or special school might be seriously considered. Children with mild emotional disturbance may attend regular classes but regular teachers must know how to deal with and teach these children.

Techniques of Teaching:

The techniques of teaching each of the two types of children with behaviour disorders are suggested separately:

1. Teaching the Aggressive Students
2. Teaching the withdrawn students

1. Teaching the Aggressive Students

- Shape the classroom environment in order to reduce the chances of aggressive, disruptive or antisocial behaviour of the emotionally disturbed child. The best way is to nip the evil in the bud.
- In creating the appropriate environment for learning, seat the students who get along well with aggressive student close to him in the class and seat the students who do not get along with the aggressive student away from him. Formulate class rules and penalties for breaking the rules with student input and apply the rules consistently.
- To minimize frustration of the aggressive student with learning, use the same techniques of learning as those for children with mild retardation. Valuable materials be kept away, from the reach of aggressive child when these are not needed for use.
- Reinforce appropriate behaviour and, if necessary, punish undesirable behaviour. Reinforcement serves the dual purpose of teaching the aggressive child appropriate behaviour and reducing the frequency of inappropriate behaviour when it is replaced by desired behaviour.
- Even after rewarding the desired behaviour, disruptive behaviour may still occur. In that case, punishment in the forms of time-out; response cost and extinction are effective for suppressing inappropriate behaviour. In time-out, the aggressive student is made to sit alone for some time soon after aggression.
- In response-cost, a certain amount (say 5%) of previously earned tokens for appropriate behaviours are withdrawn (the punishment technique of response cost is used long with the reinforcement technique of token economy. In token economy, students earn prize

tokens for appropriate behaviours to encash or exchange them later for some preferred object or activity).

- Use group contingency management techniques also in addition to the methods of dealing directly with the aggressive students. Through group management, teacher may want to reward the entire class when the aggressive student behaves. Such rewards may be free time, special classroom events or certain privileges that tend to make the aggressive student class 'hero' and foster good class relationships with the child.

2. Teaching the Withdrawn Students

- Design the classroom environment and plan lessons that encourage social interaction and cooperation between socially withdrawn child and his class fellows. Withdrawn child may stay away from others because he finds social contacts threatening or because he thinks others stay away from him due to his poor social skills. Whatever may be the reason, teachers should get the shy children closer to others.
- **For example,** preschool: and primary class teachers should urge the child to cooperative play instead of isolated play. Elementary class teachers should emphasize organized plays sports, games and team oriented learning activities like Team Accelerated Instruction.. The first step, for instance, in maths instruction is to form student groups of four or five members with varying ability levels and social backgrounds. Each group works individually on problems at their own level of understanding. Tearnmates then check each others' work against correct answer sheets. Team scores are calculated on the basis of units successfully completed by the team members each week. The teams may be rewarded by the amount and quality of work completed by each team cooperative learning is also useful for normal children.
- Prompt and positively reinforce- social interactions. A prompt is a stimulus that draws a desired response. Positive reinforcement involves giving the student something that student wants after the desired response.
- The aim of prompting and positive reinforcement is to get the child behave that way again. The positive reinforces can be verbal praise, stickers like gold stars or smiley faces and small prizes like pencils, exercise books etc. To illustrate this suggestion, a cooperative tasks may be assigned to a student who is good in interaction skills to help two other withdrawn students paint a scenery for the classroom. The teacher can assign painting of trees in the scenery to one child, painting of grass to the second and painting people to the third: After sometime, the teacher may say something like this "that is good work. I am really pleased to see you all working well together." Similar comments can be made at intervals till completion of task.
- Train other students to initiate social interactions. Since it is difficult for the teacher himself to interact with a withdrawn child due to many other class responsibilities, it is better to train such children who are good at social interactions. Explain to the helping student the goal of working with the withdrawn child, prepare the helping child to expect initial rejection by the withdrawn child and emphasize the importance of making periodic attempts at interaction. Instruct the helping child to suggest games and activities that are appealing to withdrawn child and the helper's attempts to interact with the withdrawn child must be reinforced.

Student with Attention Deficit/Hyperactivity Disorder

- Some students have short attention span and are excessively restless whose main problem is directing and maintaining their restlessness and physical activity. The American

Psychological Association has lately established this category called `attention deficit/hyperactivity disorders' (ADHD) to identify these children.. These children are mostly boys than girls whose disorder may even persist in adulthood. In our environment, children with ADHD are branded as naughty, non-serious and destructive. Due to this condition, despite -being intelligent, they have difficulty responding appropriately and working steadily towards even their own goals. They may not even be able to control their behaviour when ordered to do so, even for a brief period.

- Today, there is much reliance on drug therapy. Ritaline and Dexedrine have positive short-tern effects. There is improvement in such social behaviours of these children as attention, cooperation and compliance. Besides negative side effects on some children, the drug therapy does not seem to cure the problem permanently. The child still needs special help in learning because the drugs have not shown any improvement in academic and social learning of these children. These two areas are the great problem areas for these children. In addition to medication, they require special help in learning through behaviour modification techniques based upon behvioural and cognitive principles of learning. One promising approach to help these children combines instruction in learning and memory strategies with motivational training. The goal is to give these students the 'skill' as well as the 'will' to improve their achievement. These students should learn- how and when to apply learning aria study skills. They must also encouraged to be persistent and see themselves as able to control their behaviour.
- Even if 'the medication improves the behaviour of these children, they still need to learn academic and social skills to show better academic performance.

Disadvantaged or Culturally Different Students

Those students in the classroom who come from poor cultural background are not properly equipped with experiences which are necessary to perform well in school. Let us review a few factors leading to disadvantaged status of the child. It will then be possible to derive general guidelines for teaching such pupils:

1. Many poor children are disadvantaged due to Untreated illnesses they bring with them to the. classroom. .These diseases may be due to inadequate prenatal care and absence of treatment facilities during postnatal period.
2. These children may belong to poor social and psychological. environment. Most lower-class parents use ways of child care that work against their success in school. For instance, mothers are inattentive and unresponsive to the child who use poor language when interacting with the child. Consequently, his language and intellectual development is inferior to other children of their age.
3. Children from poor families are not exposed to wide variety of experiences. Their parents do not tutor them, talk less and do not answer their questions. Due to lack of resources, they can't afford to provide them with educational toys and other reading material. They take them less on trips. Therefore, these children remain at a disadvantage in the competitive school environment.
4. These pupils may not be -strongly motivated to do well in school. They may not know the techniques of becoming successful in school. As their parents have not been successful as students, they might have developed negative attitude, toward school. The parents, therefore, are unable to motivate and inspire them for learning.
5. Lower class children generally have low career aspirations who expect petty jobs after schooling. Due to a history of failures, these children do not have challenging, long-term

education plans. Nor do their parents encourage them to pursue higher education due to their own past negative experiences of having been dropped out of school.

6. The adolescents from poor homes tend to have to low need for achievement and role confusion of and negative self-concept. After obtaining a certificate or without it, when they experience unemployment, they are more likely to have low self-esteem which may contribute to role confusion and a tendency to form a negative identity leading to antisocial activities.

Suggestions for Teaching

- Avoid labeling the child. Instead of thinking that a disadvantaged child is beyond help, teacher might ask herself what kinds of disadvantages of the child are needed to be overcome, what kinds of strengths the child possesses. Concentrate on individuals in order to overcome the dangers of stereotyping or labeling. Once Samuel Jahnson was asked, "Are men more intelligent than women" He replied, "Which man? Which Women?" Thinking in this way helps avoid the error of assigning to individuals characteristics attributed to a group.
- Allow for the possibility that disadvantaged child may have inadequate diet and insufficient medical care. These causes might be creating learning difficulties for him. If so, search be made to contact philanthropic individuals or agencies for securing the necessary financial aid.
- Try to supply the experiences the disadvantaged students have missed. These children may not have the experience of every day objects and situations assumed in the textbook and instructional material. The urban child may not comprehend a simple rural scene and vice versa. This lack of experience can be met through a film or a field trip. Try to supply familiarity directly or in pictorial form, where necessary.
- Use all possible means to motivate the disadvantaged child. Lack of ability might not always be the cause of 'learning difficulties but lack of interest may be the reason. As already mentioned, a number of circumstances are, considered to prevent lower-class students from acquiring a desire to do well in school: lack of encouragement from parents, absence of models, low level of aspiration, low need for achievement.
- Teach these children learning and test taking skills. To earn good grades consistently, all students, irrespective of their background, must develop specialized learning skills. This will create and maintain a strong desire to achieve in school. Teacher must, therefore, give students many practice exams for answering questions. After each test, their satisfactory and unsatisfactory answers must be discussed. They may be given specific tips for writing good answers.
- Give them specific assignments, arrange, abundant practice, supply immediate feedback and emphasize over-learning. The disadvantaged students require direct and close supervision while they work individually or in small groups on specific assignments. Teachers should ask them specific questions that have specific answers and make all the decisions about what will be learnt. Over teach the disadvantaged and ask them to overlearn. First, have them study the material under your close supervision and then in small groups. Just before- exams, have them study in small groups.

Students with Learning Disabilities

- How will we explain what is wrong with a student who is not mentally retarded and educationally deprived, who has normal vision, hearing and language capabilities but who still can't learn to read, write and compute? One possible explanation would be that

he has learning disability (he is learning disabled). This category is again relatively new as well as controversial. There is no common1:- and fully agreed upon definition. There are many definitions (about 40). One widely used definition is as follows: -

- "Learning disabilities is a generic (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, and mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions and environmental influences, it is not the direct result)of these conditions or influences."

Important points in the above definition of learning disabilities are repeated below:

1. Learning disability is a heterogeneous group of disorders. It includes many kinds of problems.
2. The disorders are intrinsic, that is, the disorders are due to internal and not external factors like environment or educational system.
3. The learning disability is believed to be due to biological malfunctioning in central nervous system.
4. The learning disability may exist along with other disabilities like mental retardation, emotional disturbance and external factors like poor teaching but these conditions don't seem to be the causes of learning disability. What are then the causes of mental disability? Psychologists do not agree on it.

Some educators were critical of this category who hold that it is rather an overused or misused label. These students, actually, are slow learners.

Characteristics

As with all categories of special children, all the learning disabled are not alike. The most common characteristics are:

1. Specific difficulties is one or more subjects. They are underachievers only in a few subjects.
2. Poor eye-hand coordination.
3. Problem in paying attention.
4. Hyperactivity in the form of excessive restlessness and., inattentiveness.
5. Impulsively, that is, working very quickly and incorrectly.
6. Problem in organizing and interpreting information.
7. Disorders in—hearing, speech, memory and thinking.
8. Difficulty in making and keeping friends.

Many normal children may have some . of the above characteristics. Not all the students with learning disabilities will have these characteristics. Some of them, however, may have all the above characteristics.

Difficulties

- Most of the learning disabled children have difficulties in reading and mathematics. They have difficulty in reading because they can't relate sounds to letters that make up words, thus learning spelling is hard as well. Math (both computation and reasoning) is the second most common area of difficulty.
- The writing of some learning disabled is virtually unreadable.
- Their spoken language can be halting and disorganized.

Many researchers trace these problems to using ineffective learning skills such as:

- Lacking effective ways to approach academic tasks that is, they do not know how to focus on relevant information, get organized change a learning approach when it is not working or evaluate their learning.
- Being passive learners due to being unaware of knowing; how to learn.
- Inability to work independently, resulting in poor class work and homework. .
- Early diagnosis and help of these children is necessary so that they may not fall victim to 'learnt helplessness' out of frustration and discouragement. Learnt helplessness is a very powerful belief- of the students that they can't learn despite hard work.

Causes of Learning Disability

- There are three deficits, causing difficulty in learning:
- **Attention Deficits.** They have difficulty in attending to relevant information and getting distracted by irrelevant information.
- **Perceptual Deficits.** There is no difficulty in seeing and. hearing but in interpreting what is seen and heard and lack of eye-hand coordination.
- **Rehearsal and Metacognitive Deficits.** They do not understand that actually trying to learn increases learning. They do not rehearse the material and do not possess metacognitive skills to monitor and improve their learning.

Teaching Techniques

1. As it is often difficult to find whether the learning problem is due to mild retardation or learning difficulty, use many of the techniques useful for mentally retarded children. They may experience more frustration and lack of self-esteem than mentally retarded children due to lagging behind. others in some area only. Therefore, they need learning tasks within their capability to experience success. Teach them lessons of short duration with immediate feedback as a tangible evidence of their progress.
2. Find out ways to help them compensate for their weakness in psychological processes, as they improve achievement in specific subject areas. Arrange classroom environment to facilitate learning. Help them learn to reduce distractions, give attention and form right perceptions.

I. To increase their attention, classrooms be equipped with opaque or translucent windows, carpeting, soundproofing. In ordinary classrooms, reduce distracting sounds and sights with front side closed. When preparing written material for the' student, highlight relevant stimuli and eliminate competing irrelevant stimuli, use capital letters, underline in a different colour. In lessons, highlight important information and eliminate unnecessary talk. Tell them while you are giving important information, repeat information, stress importance, explain how the information relates to 'other aspects of the lesson and to what they already know. Suggest use of marker under each line while reading so that they evaluate one sentence at a time.

II. To those students who have short attention span, give short assignments and divide complex material into small segments.

III. For those students who have difficulty in writing legibly, use cut-out stencils so that students trace the form of a letter. Then ask the student to write the letter without stencil.

3. To overcome the deficiencies in specific areas, use direct instruction. For instance, if the student has difficulty in reading printed words, teach him how the read printed word. This method emphasizes mastery of specific skills and follow highly structured format. Teachers use Detailed written script of step-by-step instruction that emphasizes repetition student participation, and teacher feedback without correcting underlying cognitive deficits.

4. Teach them study skills, methods of processing information and principles of cognitive learning to improve their attention and memory. In fact, teaching learning disabled students, like all exceptional children, does not require a unique set of skills. It is combination of good teaching practices and sensitivity to all students.