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## Lesson 23

## COMPLEX COGNITIVE PROCESSES II (Learning Strategies)

This lecture is about the differences between how an expert solves problem, learns and retrieves solutions, and how does a non-expert, a novice does these things. In fact, **problem-solving involves at least two levels of intentions: an expert solves problem in a distinctive and expert manner as compare to non-expert.** By adopting the procedure of problem solving, any novice can become an expert. Research has shown that experts have **rich storehouses of three kinds of knowledge, namely:**

- (a) Declarative knowledge: is about facts and figures.
- (b) Procedural knowledge: is about different procedures adopted in different life situation (c) Conditional knowledge: tells how things operate.

**These stores houses help a person to become an expert and distinguish him/her from the lay person.** Along with the knowledge of these three houses, experts usually organize their knowledge in a way that can truly help to solve the problem. **Another important point is that experts organize around a central principle. They pay attention to smaller specific details and then they can move towards the larger whole and using that larger whole to understand the central principle.** This is a psychology of an expert.

**Opposed to that approach, the non experts or novices firstly lack those three big store houses of knowledge and in addition, they organize and pay attention to smaller, specific details rather than the whole central principle of what they are learning.** So, **making use of that know-how you can as a student become an “expert learner” or “expert student”?** You can become an expert student by adopting “learning strategies” and learning tactics” and their use as an experts do to organize information:

- I. Build storehouse of knowledge
- II. Pay attention to details
- III. And organize in a wholesome manner

### Learning Strategies for Student-Experts

Learning strategies are the overall plans for learning. And learning tactics are the specific techniques of putting the overall plan into operation. Teachers should also provide additional information to their students to become expert students. One should keep in mind that not only words are transferring information but information can also be provided non-verbally. As information is a continuous process. Coronation day.

### Additional knowledge and Motivation

Research has shown that students, in order to become “experts” must adopt different strategies for different times and subjects. It also shows that students should be given and gathers additional knowledge, to become expert students. They should be motivated to learn even outside the classroom. Motivation is very important; they should be motivated to apply the techniques of expert learning, Students should be clearly taught and must know these techniques of expert learning. Students, for example should focus attention, adopt self questioning and relate what they are learning to what they have already learnt. Teachers should provide an opportunity to relate their present knowledge to their already existing knowledge.

### Summarizing the Material

Another important technique in this regard is to decide what is important that should be learnt, and what is less important that may require less attention. Once these important and less important elements have been identified then the learnt materials should be made into summaries. Summaries involve the following important steps and procedures

- a. It should be short and easy to learn.

- b. It should identify and clearly state the big ideas or the central ideas of the material.
- c. It should not contain redundant information. Redundant information may be related to the topic but is indirectly related to the central idea.

### **Highlighting the Selective Material**

Another technique on the way to become expert student is using procedures of Underlining and highlighting. Some points are very important so they can be highlighted by using highlighter or by underlining the statement. In highlighting and underlining the following must be kept in mind by the students:

- (a) They should highlight /underline in selective manner. Too much material must not be highlighted or underlined; only important/selective material should be highlighted.
- (b) Students should transform information into their own words.
- (c) Students should make diagrams on their own that illustrates what they are learning.

### **Notes Taking**

Another technology in becoming an expert student is to take notes of lecturers. Research shows that taking of notes in themselves, is a process that facilitates learning, even when the notes may not be studied after words. It is like revising the lesson. It helps to store key ideas and central concepts therefore it helps and facilitates learning. They should pick up the key words/key phrases while listening the lecture; it will help you to remember the material or long time. While taking notes personal codes and other personal inputs may be used that helps learning. Like for example, to save the time and to grasp the full idea, you can write attn. instead of attention while taking notes. This is an example of your personal codes. Researchers have found that taking notes keeps the students focus in boundaries so attention does not distract and it helps to foster the learning process. Those students who adopt all/most of the above mentioned techniques tend to become better, “experts” students as compared to others.

## COMPLEX COGNITIVE PROCESSES III

### Learning Process

We learn every day; it is not just something we do in school or in formal settings. What you learnt as a young person in school you have probably forgotten it. Does that mean that your previously learning is lost, your input wasted? On the surface it appears to be so, but it's not true. Learning is never wasted as it is transferred. For now we know that whenever something previously learned influences our current learning, we know that transferred has occurred. For example when a student learns a mathematical principle and uses that principle in learning physics that is an example of transfer. When you learn to ride a bicycle and then learn riding a motor bike, we know that transfer has taken place that helps you to ride a motorbike. Transfer can be defined, therefore as the influence of previously learned material on the new material that is being learned. There are so many examples in everyday life about transfer of learning. For example, learning of Persian as language will facilitate your learning under as a language. Studying in a co-educational institution and learning to Socialize and work with opposite ---- in an academic set up helps to socialize and deal efficiently with opposite sex in later life etc. Another interesting fact is that learning to teach and deal with nursery level children is transferred to one's own children, and their up buying. Managing your own home accounts is influenced by what one has learned at one's job, managing accounts of a firm etc.

### Hindrance in Learning Process

This fact should keep in mind that transfer of learning does not always facilitates present learning in view of the past learning. The transfer can both, facilitate as well as hinder present learning. Transfer can be hindered by two important factors:

1. Functional fixedness
2. Response set.

### Functional Fixedness

Learning is hindered when the learner does not consider unconventional uses for materials at hand. Functional fixedness is the inability of person, or a learner to use tools and objects in a new and a moral way. It is the lack of flexibility in using tools of learning.

### Response Set

Response set on the other hand is the rigidity of response. It is the tendency to respond in a familiar way. If a person consumes to react and respond in the old, familiar ways, he/she is said to showing a response set. Functional fixedness, the inability to use objects and tools, including knowledge in a new way and response set the rigidity of response pattern are two most significant barriers in the ways of transfer of learning from one situation, or one domain to another situation or domain. Some psychologists distinguish between two levels or kinds of transfer:

#### 1) Low Road Transfer

Low road transfer is the spontaneous, automatic transfer of highly practiced skills with need or no need for reflection or thinking in the transfer. You have learned to drive a car, now you transfer that learning to driving a truck. Hardly any reflection on your part would be required to transfer that learning from one situation to another.

#### 2) High Road Transfer

This is an acquisition of knowledge in one field and then drawing or abstracting knowledge and then using that obstructed know in a different situation. For example you have learned to deal with children at home, and you use some of that knowledge to deal with children as a nursery class teacher. Obviously you cannot use all the knowledge gained at house, but only the derived abstracted knowledge in your role as a class teacher.

**Over learning**

It is another important method of learning and retaining. Over learning is practicing a skill beyond, over and above the point of mastery in that skill. Research shows that over learning helps the learner in two important ways. Firstly it helps to retrieve information. And secondly this revival process becomes way efficient and quick. So over learning, learning beyond mastery level is another way of efficient and quick retrieval.

## SOCIAL COGNITIVE AND CONSTRUCTIVIST VIEWS OF LEARNING I

Learning is a lifelong process that begins from the day we are born and lasts throughout life. Different theorists have discussed about learning in different ways. Albert Bandura is one of the great psychologists who has contributed much in the field of educational psychology particularly focusing on learning processes. There are two important theories of how we learn:

- 1) Social learning theory.
- 2) Constructivism or constructivist theory of learning.

### Social Learning Theory

Social learning theory emphasizes the learning of human beings by observation of other human beings. This view point was forcefully put forward by Albert Bandura, when he demonstrated that people learn by observing others and the consequences that people observe in others. His work has been based upon social behaviour of people and labeled Social Learning Theory in the late seventies and early eighties.

Bandura distinguishes between acquisitions of knowledge; that is learning and performance based upon that acquired knowledge. He proposes that we acquire knowledge based upon observation of others and then our performance or behaviour is based upon this acquired knowledge. Therefore he suggests that we all know more than what we show by our behavior or performance. Bandura put forward the views that our beliefs, our self perception, and other cognitive factors influence our learning.

### Types of Learning

According to Bandura, there are two types of learning:

- a) Enactive learning and
- b) Vicarious learning

Enactive learning is about learning by doing. For example, swimming can be learned only by doing; you cannot do only by reading the book. Another example is that psychologists treat phobia, by using enactive learning procedure. While vicarious learning is learning by observing others. Bandura believes that we learn by various learning. He has emphasized that there are four factors which facilitate and are operative in observational or social learning:

- 1) Paying attention: Social learning is not possible unless a person pays attention to the phenomenon.
- 2) Retaining information: After paying complete attention, retaining the information is the second factor that is another important factor
- 3) Producing behaviors: Relevant behavior is produced based upon attention and retention of the information
- 4) Being motivated: If a student is not motivated they cannot learn. So it is one of the imperative factors to enhance learning process.

Thus according to Bandura, the operative factors that make a person learn include: - his motivation, his behaviour or doing things, his retaining of information and his paying attention to what is being learned. Research shows that social or observational learning is affected by number of other factors as well. Some of these factors are:

- a) The level of development of a person is related to his/her learning.
- b) The prestige or competence of the model that is being observed. For example teacher is the model; students follow their teachers and see them as a model. c) The level of self-efficacy is also related to learning
- d) The expectations of the learner. For example, if student thinks that it will help him in future, it will facilitate his learning.
- e) The goal that learner has set for himself of learning and achievement. Goals can be satisfying or non-satisfying. Those goals that are achievable and challenging actually facilitate learning.

- f) The consequences that the learner expects from learning also greatly effects learning. For example, if a girl believes that after learning driving, she will be able to drive anywhere. So these consequences facilities quick learning.

So a good teacher takes all of the above mentioned factors in view while teaching and then becomes a more learned and better teacher than before. You must remember however that there is no single theory of learning. Other major contributors in education are Lev Semenovich Vygotsky, Barlett, Bruner, Dewey and Gestalt psychologists etc. They have focused on Constructivist view of learning which emphasizes the learner's contribution through individual and social activity. Constructivists' view emphasizes the active role of the learner in understanding and makes sense of information that he receives. They believe that human beings are not passive learners; they add and subtract learned information. Constructivist view talks about two forms of constructivism; i.e. Psychological and Social constructivism.

### **1) Psychological Constructivism**

Psychological constructivists are concurred about an individual builds up his cognitive and emotional apparatus. They are interested in looking attain individual, how he gains knowledge, his beliefs, expectations and self-concept. This approach is also called "first-wave constructivism", associated with the names of such psychologists as Piaget and others.

### **2) Social Constructivism**

Social constructivism, also sometimes called "second wave constructivism" is associated with the name of Vygotsky and others. They emphasize social interaction and cultural context of the learner as some of the factors that influence learning of a person. For example, during fasting if you start teaching student, it would be difficult to learn so it may hinders performance and learning. These factors should keep in mind to facilitate learning. As you can see now psychologists have considered both the individual/psychological as well as social/cultural factors playing their roles in a person's learning. A teacher who keeps both of these categories of factors in mind while dealing and teaching his students will prove to be more successful than other teachers, research tells us.



**SOCIAL COGNITIVE AND CONSTRUCTIVIST VIEWS OF LEARNING II**

The first view of learning was put forward by a psychologist, Bandura. According to him, human beings learn as a result of social factors. Bandura recognized the influence of social factors, or society on the learning of a person. The major variable of learning in social learning theory is modeling which Bandura has emphasized. When a child is born, he sees around him significant others especially parents. He learns by observing them; they are the models for a child. But modeling should not be understood as it is understood in the world of fashion design today.

**Modeling**

In the Bandura's view of learning modeling is a special term. It is used in the present context to describe, changes in behavior, thinking or emotions that occur through observing another person, called a model. Modeling has been used in the past to teach a variety of subjects and skills. For example, it has been applied and used in teaching of sports, dancing, cooking and other skills. They watch models and they learn by these models. Skillful, knowledgeable teachers know that students look up to their teachers as models; therefore some teachers use their own persons as models to teach students in the classrooms. Teachers can use their own behaviors as models for students for learning. Take the example of enthusiasm; those teachers who are themselves enthusiastic about their school subjects present a good model for their students to be enthusiastic about those subjects. On the other hand those teachers, who are not so enthusiastic about their own subjects of teaching, present a bad model for students to copy and imitate.

Research has shown that modeling can be an effective way of learning when "good" models are copied and reinforced. Research also shows that practicing the role of a good model helps learning, such that the more the practice the higher the learning of a good model. It has been shown by research that teaching of new behaviors can be easily done by presenting a role model. New behaviors are easily learned by someone if he sees, observes, and models his behaviors in accordance with the behavior of the model. For example, if we see in everyday life, a daughter learns a new recipe by watching her mother's cooking who is the role model for her.

**How to Become a Better Learner**

Research has shown that low achievers in school can improve their achievement level considerably if they see, and imitate high achieving students. Emotional reactions are also learned by/copied by modeling. If a teacher wants his student to learn more efficiently, therefore, in view of research on modeling shows that he should: -

- a) Show his enthusiasm for his subject.
- b) Point out the role models from the class for students to imitate their behaviors and learning strategies. For example, if high achiever students are identified as role model to low achievers, they can learn and improve their performance by imitating them. Teacher should help students to become better learners. If teacher is enthusiastic, it will facilitate their students' learning as well.
- c) Reinforce desirable modeling behavior. For example, desirable behavior is finishing homework in time. If a student shows desirable behavior, you should reinforce his behaviors; it will enhance the probability of this behavior in the long run.

**Ripple Effect**

Ripple effect is the spread of certain behaviors because of imitation and is, actually, the outcome of modeling by a large number of people in a group or a class. For example, you have taught an idea to a student and he has further explained it to other students.

**Constructivism**

Constructivism is a view that emphasizes the active role of a learner in learning. It is making sense of the information that a learner receives. It means you are not like a tape recorder that is receiving information from the teacher or anyone and saving it. Rather you are dynamic creative human being who adds, connects, and disconnects etc. the received information in a meaningful way.

**First-wave Constructivism---Individual Contribution**

Modern theorists talk about individual or psychological constructivism. Individual constructivists are interested in individual's knowledge, beliefs, self-concept, and how these variables affect our learning and knowledge. For example if you have negative self-concept; means you consider yourself bad person who cannot perform well, it becomes a part of individual constructivism. While some psychologists also believe that knowledge comes from reflecting, coordination. This is called first-wave constructivism that emphasizes individual meaning making. It refers to individual contribution. For example, Newton has observed a phenomenon and gave a law of gravity that was his individual contribution.

**Second Wave Constructivism--Social Contribution**

Second wave constructivism as explained earlier, is learning that happens in cultural context, and social interaction. The proponent of this second view is Vygotsky. According to him, we learn as a result of social interaction and our cultural sources play and role in our learning. For example, if you go to a new country, you learn new things due to different culture and social setup. So, learning is a lifelong process and does not end anywhere; reflection and social interaction are two of the important ways that help us to learn. Putting and understanding learning in social and cultural context is second wave constructivism.

**SOCIAL COGNITIVE AND CONSTRUCTIVIST VIEW OF LEARNING III Instructional Techniques**

There are four different valid ways in which teachers may instruct their students. You can choose one or combination of more than one methods in your class.

- 1) **Inquiry Learning**
- 2) **Problem Based Learning**
- 3) **Instructional Learning**
- 4) **Cognitive Apprenticeship**

**Inquiry Learning**

The first of these techniques instructional methods is called Inquiry learning. Inquiry learning consists of a teacher presenting a problem or a puzzling situation to students. He then asks students to gather data related to the problem. And then based upon that gathered data, find the answer to the problem. Here is an example of inquiry learning. Follow the instructions, see the situation and then suggest solution for the same. Put a small piece of paper on a table. Now blow it softly with your breath: It rises from the surface:

**Problem Based Learning**

Problem based learning consists of the methods that provide the learners with realistic problems that do not necessarily have “right” answers. For example the teacher may present the problem of energy shortage in Pakistan and ask for solutions. Obviously there is no one solution for it. The students then are encouraged to study the problem and suggest different solution that may solve the problem.

**Instructional Learning**

The third method is consists of dialogues or conversations between teachers and students that promote learning which also called instructional conversation. Obviously learning is not confined to class rooms and lectures; it continues after class and lectures. So what students learn from teachers in mutual interaction, dialogue exchange of ideas is called Instructional Learning. It is said when people went to meet Dr. Allama Muhammad Iqbal, he used to teach them through conversation. Another example is that students are walking with the teacher after lecture and they are discussing any topic. This is an example of instructional conversation that helps students to learn outside of the classroom. Tea houses culture is also a form of this learning. This is the responsibility of a teacher to identify students who do not ask question in classroom, involve in this sort of conversation to help them to learn more. Such as, you can involve students in constructive conversation during sports to encourage them etc. There are some things which cannot be learned without practical knowledge.

**Cognitive Apprenticeship**

The fourth method in the present context is called Cognitive Apprenticeship. This consists of a relationship in which a less experienced learner gains knowledge and skills under the guidance and supervision of an expert. In Pakistan labor scene, we witness the operation of this method when we see young boys working at tailoring shops or motor workshops, learning to cut cloth, and stitch clothes under the guidance experienced tailors.

**Practical of These Learning Methods**

After having learnt about the four methods instructional learning let us now attend to some practical usage of those methods. Regarding the first method namely “inquiry learning” you may observe, collect data and write a small 200 words report on how do pigeons communicate amongst themselves. Regarding the second method, namely “problem based learning”, you may gather information on why is there power shortage in Pakistan and then suggest ways how power shortage in Pakistani cities be alleviated, reduced, or helped. Regarding

“instructional conversation” you may approach your teacher, involve him/her in conversation regarding how he/she studied his/her course work as a student, and how he/she may guide you to plan your study course. And regarding cognitive apprenticeship you may choose a hobby you are interested in, gardening, making small model aircrafts; then choose a gardner, someone interested in and proficient in gardening, or aero modeling: Attach yourself to him/her and actually carry out gardening or model aircraft building under her/his guidance and command.

After having understood and actually carried out all four of the above mentioned teaching methods you would have learned a host of modern teaching techniques that you can use in your daily practical life, and bring to the old teaching system up-to-date modern knowledge.

## MOTIVATION IN LEARNING AND TEACHING I

There is a relationship between learning and motivation. Motivation is what energizes a person, directs a person's behavior towards a goal. Psychologists distinguish between intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to acts and activities that are rewards in themselves. It is related to personal factors and stems from a person's needs, his interest. Extrinsic motivation on the other hand is related to external, environmental factors such as rewards, social pressure, or punishment. We are intrinsically motivated, driven by such personal factors as our needs, interests and our curiosity. For example, solving puzzles, enjoying swimming are an example of internal motivation. And we are also driven by the outside of the self, external factors such as rewards, punishments or social pressure. For example, to avoid punishment, student completes his homework daily in time.

### Locus of Control

Locus of control or locus of causality refers to whether a person's behavior is caused by internal or by external factors. If we take a bird's eyes view of different points of view regarding what motivates people, four major approaches appear as explanations. Let us view these four major points of view of what motivates a person.

### Behavioristic Approach and Motivation

The first of these is the behavioral point of view of motivation. This view explains behavior of a student in a class room as the result an incentive. An incentive is an object or an event that encourages or discourages behavior. Thus according to this point of view motivation in students is dependent on incentives, objects or events that encourage or discourage behaviors. Providing grades, stars and stickers etc. to students are incentives, to motivate them. Ignoring, or awarding low grades are punishments for students that motivates students to avoid certain type work. So, behavioral approach explains student's behavior as related to rewards and punishments.

### Humanistic Approach and Motivation

The second approach in understanding behavior is what called the Humanistic Approach. This approach suggests that human needs exist in the form of a hierarchy such that there are lower level needs, essential for survival; and higher level needs for intellectual achievement; and finally the need for giving expression to one's highest level of self; or self-actualization. According to this theory, motivation comes from fulfilling lower level needs and when the lower level needs is satisfied then one is motivated to fulfill higher level needs.

### Cognitive Approach and Motivation

The third approach to the understanding of motivation is what is described as Cognitive Approaches to motivation. This view emphasizes the fact that human behavior is determined by our thinking and not only by need satisfaction or rewards and punishments. This view emphasizes that human beings do not only respond to physical needs or conditions, but also to the interpretation of these needs. One cognitive explanation of motivation emphasizes that we try to make sense of our own and other people's behavior by searching for causes and explanation for such behavior. Seeking causes for human behavior is considered the major reason of human motivations in cognitive approach to motivation.

### Socio-Cultural Approach and Motivation

The fourth theory in the present context is called the Socio Cultural view of motivation. This view emphasizes the role of participation and interpersonal relation as the major cause of human behavior. People engage in social activities to build and maintain their personal identities and their interpersonal relations with a community; that is what social cultural theorists believe.

So psychologists have explained human motivation in four different views, namely behavioral view, humanistic view, cognitive view and social cultural view. Each view has an element of truth in it. Now in view of the above

discussion you can see as a teacher that your students can be motivated and their motivation comes from two broad categories of factors, they are:

- a) The internal factors such as interest; beliefs, self-fulfillment, and
- b) External factors such as rewards and punishments

A good teacher is one who knows all these operative factors in the class room, and then she/he manipulates these factors, of internal motivators and external motivators to impart knowledge to his/her students. For example she /he may plan and use student interest in sports to teach them the value of cooperation for winning in sports. OR use rewards for students for doing homework and avoid punishments.

## MOTIVATION IN LEARNING AND TEACHING II

Success in teaching is related to number of factors such as motivation, teaching strategies etc. One another important factor is called goal orientation or goal achievement. A goal is an attainment that a person is striving to achieve. Without goal, any effort is meaningless. Goal directed behavior is the behavior that seeks the satisfaction of a goal. Goal setting in learning and teaching improves performance.

### Importance of Goal Setting

It improves the performance because of following reasons:

- a) Goal settings directs/focuses attention
- b) It mobilized effort.
- c) It increases persistence; to remain focused and continue put in efforts even in the face of obstacles.
- d) It helps develops new strategies of effort

### Characteristics of Goals

Research has shown that goals have the following characteristics that make a goal more motivating:

- a) Clearly defined goals. For example, a student set a goal for five hours reading.
- b) Specific goal. Not clearly defined but are specific and are not vague
- c) Reasonable goals. For example, if a teacher ask student to write a sentence two thousand times, it will be a un-reasonable goal.
- d) Moderately challenging as opposed to too easy or too difficult to achieve.
- e) And those attainable in a reasonably short period of time, rather than long terms.

Keeping the above in mind teachers should set goals for themselves and for students that have the above stated characteristics. One important variable that motivates people including students is the fear of failure. People, including students want to avoid failure, that fear motivates them. Psychologists have identified three levels of such fear:

- 1) The first is low fear of failure, where students keep their learning goals challenging and moderately difficult.
- 2) The second level is high fear of failure, where learning and performance goals are very high and difficult to achieve.
- 3) And the third level is failure accepting where students, expect to fail and are depressed even before they actually fail. Here their performance goals are very vague and in some cases not even defined.

Research has also shown that student's interest and their emotions play a most significant role in their learning. If a student is fearful, bored, or excited those states of mind affect his learning. Another operating variable in student learning is emotion, or arousal. Arousal involves psychological as well as physiological reactions. There are changes in blood pressure, heart rate and breathing rate. And we feel alert, wide awake and even excited. The state and level arousal effects learning, such that optimal learning takes place at optimal arousal, meaning not too low level of arousal and neither too high a level of excitement. So interest and emotions play a significant role in students learning.

### Self-concept and Self-efficacy

Another factor that is related to student learning motivation is self-concept. Self-concept refers to a person's belief about himself. One important part of one's concept of self is self-efficacy. Self-efficacy is the belief that a person has about his/her personal competence in a particular situation. For example if you are driving a car and get a flat tire and know that you can change it or get help to have it changed; this view shows a high level of self-efficacy. One must remember that self concept and self efficacy are not the same. They are

different. Self-efficacy refers to the competence to perform a specific task. Whereas self concept is a more generalized perceptions and views of one's self. And opposed to these two, self-esteem is the value that we attach to ourselves our abilities and our behaviors. All their variables, namely self concept, self efficacy and self esteem affect a students learning and motivation in general and to learn in particular.

Self-determination is the desire to live according to our wishes and desires rather than according to external pressures. People including students constantly struggle against external pressure and want to live by selfdetermination. A class room environment and a teacher's attitude that encourages self determination to more helpful for learning. Self-determination and autonomy is related to greater students' interest, creativity, and conceptual rather than rote learning. Therefore all teachers should strive towards autonomy and selfdetermination in class.

### **Learned Helplessness**

Learned helplessness is an expectation or feelings, due to previous experience that all of one's efforts will lead to failure. People who have developed learned helplessness believe that events and outcomes in their lives are out of their control and uncontrollable. Learned helplessness in students can cause three types of problems for them:

- 1) Problems of lack of or low motivation for learning, putting in effort etc.
- 2) Problem of low effort to carry out clear and unambiguous thinking.
- 3) And problems of negative emotions of despair, hopelessness, pessimism etc.

Such people who have developed helplessness may also suffer from anxiety, depression, and listlessness. So teachers must be aware of how students can be motivated, on the one hand, and how the factor of self concept operates, and how helplessness may over take them. And then should help their students through such problems.



**MOTIVATION IN LEARNING AND TEACHING III Student Motivation**

Motivation is one of the key factors in motivation. Almost, all students are motivated in one way or another. Some psychologists have identified six factors that motivate students to learn.

**Nature of Task**

The first motivating factor in this regard to the nature of task, on the work the students are expected to carry out. Research shows that if task that they are assigned is structured and specific, then it motivates students. And conversely if it is vague and haphazard it de motivates students. Clear goals are motivating, as opposed to the vague ones.

**Autonomy**

The second motivational factor that may encourage students is autonomy. It means that once they are clearly given the tasks to fulfill then they must also be given freedom or autonomy as to how to fulfill those tasks, or carry out activities to achieve the goals in for those tasks. The third factor that increases student motivation to learn is recognition. When students are recognized and rewarded for task accomplished, and learning carried out, this reward or recognition encourages and motivates students to undertake further work, which motivates them.

**Groups**

Another, the fourth factor is grouping that tasks place or is deliberately created by a teacher to carry out a task. For over one hundred years different experiments carried out in different countries, all over the world has shed higher on the influence of group on the performance of its members. And in all those experiments and observations it has repeatedly been shown that working in groups influences a person's performance, including his learning. Thus working with other students, friends, peers, and other important class mates motivates students, among other factors. Hawthorne experiments are one the example in this regard. When students work with in cooperation with other students particularly when they like or admire others that they work with, students motivation increases.

**Evaluation Process**

The fifth factor in this context that increase /influences student motivation to learn is the evaluation process carried on by the teacher. If the evaluation and grading is carried out in objective and standardized manner, that motivates students as opposed to grading and evaluation based up teachers or evaluators subjective judgment and haphazard marking standard. When students are encouraged to set up and participate in the evaluation process, this practice motivates students to learn better than before. So evaluation must not only be standardized but should also have input by the students.

**Time Management**

The sixth and last factor that psychologist have identified to influence student motivation to learn is time and its management. If you as a teacher look at the syllabus and the time period that you may have to cover that syllabus. You concise would realize that there is not enough time in view of the quantity of the matter that is to be taught. The best way to adjust time and material is to adopt what is called block scheduling.

**Block scheduling**

Block scheduling involves dividing the work in to chunks or blocks, and then devote a preset time period to each block or chunk of work. Thus finishing each block of work within assigned time period. Following the block scheduling the entire work can be finished within the assigned time. Student motivation in general will be helped if you as a teacher ensured four of the basic requirements.

- One, provide an organized class environment, where a teacher supportive, tasks are moderately challenging.

- Two, build student confidence by making learning goal specific and clear.
- Three, show the real value of student learning, connecting learning with students needs and activities.
- Four allow and guide students to stay on focus, teaching than how not to let their attention and focus waver. Ensuring all/most of the above will make you a good teacher.

**CREATING LEARNING ENVIRONMENTS Classroom Management**

Classroom management refers to maintain a positive and productive learning environment. These are the techniques that you as a teacher may use to create a healthy learning environment, free of behavioural problems. This is done by the teacher or an administration. Self-management on the other hand is the management of one's own behaviour and to accept responsibility for one's actions. In classroom management, the teacher demands obedience and regulation of behavior from students. In self-management the student himself controls and directs his behavior.

**Self-control**

Self-management involves self-control on the part of the students. Self-control involves fulfilling and satisfying one's own needs without interfering with the rights and needs of others. Encouraging and teaching self-management to students may require some extra time and extra effort on the part of the teachers. Once inculcated it proves beneficial for students in later life. If you time yourself in the classroom you would notice that much time is lost in interruptions, disruptions, late starts, and transitions from one topic to another, all of this lost time. Slots and time can be salvaged if you as a teacher improved your time management.

**Better Time Management**

**Allocated time:** One way to better time management is estimating the amount actually spent on learning. This is called allocated time. Allocated time is the time period that a teacher sets aside for learning.

**Engaged time:** Then there is engaged time; this refers to the time period specifically spent in actively learning.

**Time on task:** You may also become familiar with what educational psychologists call "time on task", this is the time period that is spent on actively engaged in learning a specific task at hand. Time spent on various ways in learning may or may not lead to real learning.

Thus academic learning time refers to the time students spend on really learning and understanding. One research undertaken by Weinstein and Mignano shows that of the one thousand and one hundred hours of class time, about one thousand are spent on attended time; about five hundred are spent on actual academic time, about four hundred hours are spent on engaged time and about only three hundred hours are spent on academic learning time, when students actually succeed in learning a task. Classroom management is possible and improves when school and class rules and procedures are clearly stated by administration. And when these procedures and rules are conveyed to students and are understood by them. This is western countries; research, in Pakistan it has observed that less than the mentioned time is spent in our schools for learning.

In this regard, Weinstein and Mignano, important researchers in the field of education, have suggested the following strategies to improve learning and motivation:

- a) Administrative routine, such as when and how attendance will be taken who shall be the monitor of the class etc.
- b) Student movement, how and when students, may enter or leave the classroom.
- c) Housekeeping, how and where personal items of students will be stored.
- d) Routine for accomplishing lessons how the home work assignments be collected and returned.
- e) Routine for interaction between students and teacher will be clearly spelled out and explained to students.
- f) Procedures for talk between students should be clearly explained.

**How to Improve Your Class**

Keeping the above in view it is suggested that in order to better manage your class you should carry out the following activities:

- a) Divide and convey how students are expected to enter and leave class room.
- b) Determine procedures to up keep desks and class room equipment.
- c) Establish a clear signal to the start of teaching.
- d) Set and convey procedures for students to ask questions, make comments.  
Determine how assignments will be given, and collected. It should be made understood; it will improve class management which will, in return, improve learning and motivation.

All these will also enhance self-discipline, class-discipline, and group-discipline in students that is one of the essential parts for better learning environment. Clearly setting these routines and produces will greatly improve class management and will thus facilitate over all learning and teaching.

**MOTIVATION IN LEARNING AND TEACHING Classroom Arrangement**

One of the important factors that influence learning in class is the classroom arrangement. Classroom arrangement refers to two basic ways of organizing the space in the class. These two spaces are:

- 1) Interest areas and
- 2) Personal territories

The usual space division involves that the personal territories are placed in the center of the room with interest areas in the back or in the periphery of the room. Personal territories allow students to interact with other students in the class. Interest area being in the periphery allows students the opportunity to look at and interact with auxiliary materials, including charts; diagrams black/white boards etc. Interest areas may be guided by a number of factors that teachers may keep in mind. They include such factors as encourage students to plan for self selected goals, achieve these goals etc. Personal territories can also influence student learning. Personal territories are the areas where students sit and interact.

Research shows that those students who occupy front seats participate more actively in the class and in teaching. And those who occupy back seats tend to get less involved in class work. Back seat occupiers also tend to indulge in more day-dreaming in the class room as opposed to front bench occupiers.

**Action Zone**

The concept of action zone is important in this context. Action zone is the area in the classroom where student teacher interaction, and student participation is greatest in the class. To increase action zone and make learning most effective in class, it is suggested by experts that a teacher should:

- a) Move around in classroom rather than stay at one place
- b) Establish eye contact with all students
- c) Direct questions to all students
- d) Vary seating of students from time to time

**Effective Class Management Strategies**

Psychologists have studied various ways in which motivation in learning and teaching may be enhanced. They suggest three ways that may be used in that context. Jacob Kounin suggests after close observation, the following are the more important factors in class management leading to effective teaching and learning:

- a) The first of these is “withiness”. Withiness means that the teacher conveys to students that he/she is aware of whatever is happening in the class room.
- b) Timing errors may involve waiting for long periods before intervening. And targeting errors means blaming wrong students for mischief.
- c) Over lapping means that teachers can and supervise many activities at the same time. They are looking after, for example, of the work of many students at the same time.
- d) And group focus means that teachers can and do involve many more students all at the same time.
- e) Keep many students involved in appropriate class activities helps improve students focus on learning, helps students become more motivated. It helps avoid narrowing teacher focus on one/two persons.
- f) The last and another effective method of maintaining good learning environment is managing the student movement and managing the lesson movement in class and during study time.

Managing student movement means keeping a check on when the student may or may not move about from one place to another in the class. And lesson movement relates to the pace of teaching. This involves keeping the lesson at a flexible and appropriate pace and making smooth transitions from one part of the lesson to another. One danger in this regard is the problem of slow down, that is taking too much time with some topic and making it boring for the students.

**Lesson 33****CREATING LEARNING ENVIRONMENT Planning Strategy**

Physical environment affects one's learning; as there are many factors that disrupt or facilitate learning. Research in the past has identified many strategies that are available to teachers to get students to complete their work. Along with discipline, one of the most important and basic strategy is planning for the completion of a task. Teachers have found that planning helps to divide time, and assign material in that time, to be taught, helps to clarify teaching and instructional goals. They consider therefore planning of time to be of almost importance. Planning, they have experienced, can help them to devote time to different subjects, on the basis of difficulty of the subject; i.e. more time to relatively difficult subjects and relatively less time to relatively easier subjects.

Planning can be done at several levels, on a yearly basis, term basis, month basis, week basis and daily basis. The important thing is to keep in mind that all of the levels must be coordinated for an overall goal to be achieved. Planning reduces uncertainty from teaching and clearly sets objectives, goals and standards to be achieved and maintained. Planning helps to reduce, though not completely eliminate uncertainty from work. However it must be stressed that planning must allow flexibility.

**Over Planning**

Some variations, delays and over stepping in teaching will inevitably be experienced which is natural. Over planning involves very strictly adhering to a pre set routine of teaching, with very little thought to student reaction and understanding of the subject. It must be avoided.

**Knowledge of the Subject**

In order to plan, teacher must have a thorough knowledge of the subject, as well as the students. She/he must know the details and other various parts of the subject that he/she is going to teach, as well as the mental level, personality interests and motivations of their students. Only a good planning can result in good teaching.

Planning can be done by the teachers, but psychologists suggest a collaborative effort by both the teachers and the students. Teacher/planner must remember that planning is a certain process it needs to be changed, updated, and modified from time to time. However, there are chances that a teacher may have planned a lesson but some problems may arise in delivery of the plan. So maintaining a good discipline in class is a great importance.

**Maintaining Discipline**

The key to maintain discipline in the class is to know what is happening in the class and then prevent it before it blows out of proportion. Some educational psychologists have suggested the following ways for teachers to get the students to finish their work on time and maintain discipline:

- Remind the students of the work plan, and the importance of getting it done on time.
- Remind them of negative effects that will follow if the work is not done or completed.
- Give them verbal hints to complete the task.
- Clearly direct those not attentive to attend to work, showing them the procedure of how to do it.
- Clearly but calmly ask about their disruptive behavior and show them how to get involved in finishing the planned work.
- Make eye contact with all students, especially those who may not work or may indulge in wayward activities, and make sure they desist from non productive activities in the class.
- Teacher must show respect
- If someone still persists, offer him/her a choice, either he/she stops or will have to talk to the teacher after the class.

Conflict between a student and a teacher may lead to penalties being imposed by the teacher. This conflict between teacher and student may be resolved talking to a student privately. It can be done by catching students before a problem blows out of proportion. It can be resolved by following a consistent approach in solving problems of students. It can be resolved to teach students to take the responsibility of their own behavior and need it. Teacher must convey clearly to the students that are reasonable for their acts and teachers should anticipate any behavior problems and should tackle in time before it arises to the conflict level. However as a last resort the conflict problem may be referred to the head/supervisor/Principal for his/her input.

## TEACHING FOR ACADEMIC LEARNING I

Educational psychologists have long debated on the “goals” of teaching: Should the goals of education be improvement in behaviour, or a higher vision, or what: After much debate and thought, educational psychologists have outlined three types of goals or objectives that they feel adequately fulfill the proper requirement, definition and the end result of education. These three objects pertain to :

- 1) What is to be taught?
- 2) What changes or improvements are expected in the behaviour of the people who are taught
- 3) And what changes or improvements are expected in the thinking of the people who are taught.

### Objectives for Learning

Specifically the objectives for learning are stated and defined as:

- a) Instructional objectives
- b) Behavioral objectives and
- c) Cognitive objectives

### Instructional objectives

Educational psychologists define instructional objectives or the goal of instruction as the “intended learning outcomes, or the types of performance that students are expected to demonstrate at the end of instruction to show that they have learned what they were expected to learn”. Instructional objectives are a clear statement of what students are intended to learn through instruction: For instance they should learn and recite the table of 7 or the alphabets.

### Behavioral Objectives

Behavioral objectives are lists of acts or behaviour that students are supposed to show at the end of instructions. Behavioural objectives are instructional objectives stated in terms of observable behaviours or acts. For example students can draw a triangle or a square with a pencil on a plain paper.

### Cognitive Objectives

And cognitive objectives are goals in thinking or comprehension that students are expected to have gained or achieved, as a result of instruction. Instructional objectives are stated in terms of higher level thinking operations: These objectives emphasize that students understand what they have learnt by applying or using the knowledge or information in various ways that they have acquired from the instructions. Psychologists consider a good instructional objective the one which satisfies three criteria: - 1) The objective describes what the required behavior from a student is.

- 2) The objective describes and lists the conditions under which the described behaviour will occur.
- 3) It clearly states the criteria for acceptable performance.

The three part learning objective therefore consists of:

- 1) A student’s behavior.
- 2) Conditions under which the behaviour will be performed and
- 3) The criteria that will be used for judging the performed behaviour.

Some psychologists recommend and use a two steps approach in defining and stating instructional objectives. That two step approach is to first state in general terms, the objective for instructions. And then in the second step a teacher provides examples and lists behaviours that illustrate the instructional objective. For example a student has carried out a small survey of different kinds of trees that he observed in and around the school.



Under the two step approach he first presents his general objective before the class. And then gives details and specific description of the survey, describing different kinds of trees in and around the school. This approach moves from the description the general to the description of the specific. Educational psychologists have found both of these approaches, the three objectives approach and the two step approach in defining instructional objectives, as quite useful in imparting instructions to students. They leave it up to the class teacher concerned, to adopt and follow one approach or the other.

**Different Ways of Learning**

One important way of learning or a variable in instructions is seatwork. Seatwork refers to the independent work that students do in the class. Another learning tool is homework, the work assignment that they carry out at their respective homes, where a little or no supervision of work is available to them. Another way of learning is questioning; the teacher questions and the students answer, and learn in this process. And another instructional option available for instructions is of holding group discussion. Group discussion is a conversation in which the teacher does not have a dominant role, but students pose and answer their own questions. So seat work, homework, questions, and group discussion are other instructional options that are available to a teacher to achieve educational objectives.

## TEACHING FOR ACADEMIC LEARNING II

### Characteristics of Effective Teachers

One of the important topics in educational psychology relates to effectiveness of a teacher. In other words who is an effective teacher? Are effective teachers born or are they made by knowledge, skill, and practice? When educational psychologists probed the answer to those questions, they came up with some interesting answers. Research and probing showed that effective teachers have some personal qualities that not-soeffective teachers lack. Researchers have identified three of these qualities of effective teachers.

1. Knowledge of the teacher
2. His clarity of thought
3. His warmth for others

### Teachers' Knowledge

Do teachers who know more about their subject have a more positive impact on their students? When we look at teachers' knowledge of facts and concepts, as measured by test scores and college grades, the relationship to student learning is unclear and may be indirect. Teachers who know more facts about their subject do not necessarily have students who learn more. But teachers who know more may make clearer presentations and recognize students' difficulties more readily. They are ready for any student questions and do not have to be evasive or vague in their answers.

### Clarity and Organization

The second quality of an effective teacher is his clarity of presentations. Research shows that those teachers who make clean presentations and give clear explanations, tend to be more effective in imparting knowledge as compared to other teachers. Research shows that the students of such teachers learn more from such teachers than others. Such teachers are also rated higher than others by their students. So, teacher's knowledge and his clarity and organization of the lesson tend to make them more effective in their roles as teachers.

### Warmth and Enthusiasm

The third important characteristic of an effective teacher is his warmth and enthusiasm. Research shows that warm and friendly teachers are generally well liked by students, thus affecting student's involvement in the class and the subject. Warm and enthusiastic teachers tend to get more attention of students and thus tend to become more effective as teachers than others. So knowledge, clarity of expression and enthusiasm are some of the characteristics of effective teachers.

### Constructivist Approach

Traditionally teachers set the course of work and impart knowledge to students. However the new way to impart knowledge is to adopt what are called "constructivist approaches", where planning for teaching and imparting knowledge is shared and negotiated. In this approach, teachers and students make collective decisions about the contents, activities, and approaches in teaching. Some psychologists have clearly stated the objectives for such collective decisions on contents, activities and approaches in teaching. The teacher emphasizes the consultation of primary sources, handling of multiple points of view in teaching, becoming close to students and posing questions and solving problem for his students.

The next step in the planning process is to create a learning environment that allows students to move toward these goals in ways that respect their individual interests and abilities. The teacher spends less time planning specific presentations and assignments and more time gathering a variety of resources and facilitating students' learning. The focus is not so much on students' products as on the processes of learning and the thinking behind the products.

Based upon the above, psychologists have come up with six strategies that can make teaching effective:

1. The lesson plans should be well and carefully organized.
2. A teacher should anticipate some difficult parts of the lesson and be ready to resolve the difficulties.
3. Explanations of the lesson should be clear and unambiguous.
4. A teacher should make connections between previous learning and present learning of the students.
5. A teacher should give clear signals to students when transitions are made from one topic to another topic.
6. The teachers should be enthusiastic about teaching and communicate his enthusiasm to his students.

When clarity of expression, high level of relevant knowledge, good lesson organization, warmth and enthusiasm are combined with collective decision making, such approaches make a teacher more effective, as opposed to someone who does not adopt these strategies and approaches.

## TEACHING FOR ACADEMIC LEARNING III

### Learning to Read and Write

Educators have long debated the question of meaning based versus sound based teaching approaches.

**Meaning based teaching** emphasizes that teachers should not dissect words and sentences but should focus on conveying the meaning of the text to the students.

**Sound based teaching** emphasizes the approaches in teaching that relate to sounds of the words.

Educational psychologists have now however agreed that the best approach in teaching is to make use of both approaches, of phonics and whole language. That is adopting the approach of producing the correct sounds of the words that are taught and also to impart meaning of the words at the same time.

### Comprehension Monitoring and Reading: Reciprocal Teaching

Reciprocal teaching is a method based upon making students understand and think deeply about what they read. Educational psychologists agree that in order to make students understand and think deeply four strategies may be adopted by a teacher.

1. The content of a lesson must be summarized for students and then taught.
2. Then students are asked questions about the summarized contents that have been taught to them.
3. Then student's questions are answered and difficult complex parts of the lesson are clarified.
4. And finally anticipating or predicting what will come next in the lecture.

So summarizing, questioning, clarifying and predicting are the four steps in reciprocal teaching. Research has shown that reciprocal teaching helps students achieve better understanding of their subjects and particularly helps below average students to improve their grades in educational institutions.

### Learning Mathematics

In teaching of mathematics educational psychologists emphasize antinomy, reflection and reviewing etc.

Antinomy refers to, in this context, student's commitment to their answers that is they must be able to explain their answers to questions related to the lesson.

Reflection means students can understand and explain the lesson in different ways, what they did, and why did they do that.

Reviewing means going over the solution again and finding the answer to be correct.

So promoting independent ways to provide answers, developing reflection and reviewing the solution are important ways of teaching.

### Learning Science

In learning science conceptual change is a method that has been found to be effective. Conceptual change refers to helping students understand rather than simply memorizing concepts. This is done with special reference to teaching of science subjects and involves students going through six stages.

1. Initial discomfort with their own ideas and beliefs.
2. Recognizing and explaining away inconsistencies between their ideas and evidence presented to them.
3. Attempts to adjust measurements or observations to fit personal theories.

4. Doubts about new learning.
5. Vacillation and
6. Finally conceptual change that is understanding the concept rather than just memorizing its contents.

Psychologists recommend five guidelines for their types of teaching.

1. Encourage students to voice their own ideas.
2. Help students to see the differences between difficult ideas.
3. Encourage students to test their own responses.
4. Explore student's ideas.
5. Ask students for the first fictions of their ideas.

Adopting conceptual changes makes a better approach in teaching, research shows.

## TEACHING FOR SELF-REGULATION, CREATIVITY AND TOLERANCE I

Educational psychologists emphasize self-regulation as a major variable in teaching and learning.

**Self-regulation** is the process we use to activate and sustain our thoughts, behaviors and emotions in order to reach our goals. In other words, what we do to attain our goals in life, including self-learning, learning of new skills, sustaining old skills, self-control and motivating ourselves to attain what we want to attain, is self-regulation.

Psychologists, after experimentation and observation, have identified four factors that contribute to self-regulation. These four factors include: -

1. Knowledge
2. Motivation
3. Volition or will power
4. Family's influence

Let us look at them in some detail.

### Knowledge

In reference to **knowledge**, research has shown that a student's self-regulation is influenced by this knowledge of his own self, the subject matter that he is studying or is supposed to study, the strategies that are available to him to study, and matter the subject, and the context where they will need to apply the subject that they are learning.

### Motivation

A second factor that influences self-regulation is **motivation** of a student. Research shows that self-regulated students value their learning. They know that by learning about the task at hand they can gain many benefits for them. So they are more interested and determined to discipline themselves and apply themselves to learn.

### Will power or volition

Self-regulated students are people who apply a high level of **will power or volition** to keep focused at the task at hand and gain maximum benefits from their effort. They know how to protect themselves from distraction and keep themselves focused on the task at hand.

### Family's influence

And finally a **family's influence** affects the self-regulated behavior of students. Parents who themselves are self-regulated; bring forth children who show self-regulation. Parents, who encourage self-regulation in their children, facilitate self-regulation in children.

So in summary, it can be stated that self-regulation can be taught by direct teaching, by providing good self-regulated models, by practicing self-regulated behavior and by encouragement and support from parents, family members and teachers.

### Creativity

Creativity is defined as the ability to produce original and appropriate work.

Psychologists agree that creativity is domain – specific, that is a person may be creative in a particular area or domain and not necessarily in all aspects of life. Research has shown that creativity in a person, including a

teacher or a student, is related to a number of factors that include personality factors, motivations of an individual, his past or back ground experiences, and the social environment in which he works.

Creativity is observed to be related to divergent thinking. Divergent thinking is coming up with many different possible solutions to a given problem, or in a situation. Psychologists have observed that there are three aspects of divergent thinking. They include: -

1. Originality: Divergent thinking is new or original.
2. Fluency: The number of different ways of thinking.
3. Flexibility, The number of different categories of responses.

So students who show different ways of solving a problem, who come up with a number of different responses and who show many categories or groups of responses, show divergent thinking, a sign of creativity.

### **Brain Storming**

Brain storming is the process of generating different ideas without stopping to evaluate the practicality of those ideas. Evaluation, discussion and criticism in a brain storming session are postponed for later. Divergent thinking and brainstorming are usually lead to creativity.

Educational psychologists recommend and emphasize the following to encourage and foster creativity in students:

- Accept and encourage divergent thinking.
- Tolerate dissent, by making sure that nonconforming students get an equal reward and encouragement in class room.
- Encourage students to make their own judgments.
- Emphasize that everyone is capable of being creative in some form.
- Stimulate brain storming and encourage unusual solutions and ideas.

### **Measurement of Creativity**

Measurement of creativity may be difficult; however some psychologists have developed two types of creativity tests; one verbal and the other graphic.

1. In a **verbal test**, for example, a person is instructed to think as many uses of an object as possible.
2. In the **graphic test**, a person might be given a drawing and asked to generate as many different shapes from it as possible.

Assessment of creativity from students may be gauged from the observation of curiosity, high energy and concentration, play fullness, risk taking, willingness to fantasize, intolerance of boredom and daydreaming. All of these are indicators of creativity in students.

## **Lesson 38**

### **TEACHING FOR SELF-REGULATION CREATIVITY AND TOLERANCE II**

#### **Emotional Intelligence**

One important concept in recent theories of psychology, which has a great bearing on educational psychology, is the concept of Emotional intelligence.

Emotional intelligence has been defined in different ways.

One definition of emotional intelligence is that it is the ability to process emotional information accurately and efficiently. It was psychologist David Goldman who popularized the idea of emotional intelligence or EQ for short. Some psychologists also defined EQ as the ability to understand one's own emotions, the emotions of other around the person, and there to use this information for the welfare and benefit of all concerned.

**What is EQ?** Psychologists have identified four broad abilities to be the constituent's parts of EQ.

These four abilities includes: -

1. Perceiving emotions
2. Integrating emotions
3. Understanding emotions
4. Managing emotions

Let us explain these four abilities in some detail.

### **Perceiving Emotions**

Perceiving emotions means recognizing emotions. When someone perceives emotions he/she can make good choices and select appropriate behaviors in view of that perception of emotions.

One the other hand if he/she does not perceive and recognize emotions then he/she is liable to make poor choices.

### **Integrating emotions**

Those who can integrate their emotions into their thinking and behavior cope with life more adequately than others.

### **Understanding Emotions**

Those who understand their own emotions and the emotions of others around them respond more adequately and successful than others.

### **Managing Emotions**

And final those who can manage emotions, particularly negative emotions, such as anger, disgust, and hate etc do not become overwhelmed by negative emotions and can cope with themselves much better than others.

Management of emotions may further be explained in terms of four reactions.

1. First proper management of emotions involves focusing one's energies in the proper, appropriate goals and directions.
2. Secondly management involves to persist in doing the right, appropriate thing in spite hindrances, barriers and difficulties.
3. The third thing in that regard is to control ones impulses that may way lay a person form his/her goals.
4. The fourth thing in managing emotions is to be able to delay immediate gratification of one's wishes, desires and impulses.

Those who focus, persist control impulses and delay immediate satisfaction of impulses show high level of emotional management.

### **Social Skills**

Social learning or learning of social skills are very important in learning in schools.Social learning is also related to listening.Research shows that listening is valuable in the class in social relationships and on the job.



Psychologists have identified various techniques of listening which helps in learning, such as

**One:** You should look at the person you are listening to make eye contact.

**Two:** Be quiet when you are listening.

**Three:** Think about what is being said.

**Four:** Say yes or no, nod your head when you agree or disagree with what is being said. **Fifth:** ask appropriate questions about what you are listening to.

**TEACHING FOR SELF-REGULATION, CREATIVITY AND TOLERANCE III**

Violence in schools among other factors has diverted the attention of educational psychologists to focus on how compassion and tolerance may be fostered and developed in schools. Educational psychologists have been successful in identifying factors that lead to an absence of compassion and tolerance in schools, and breed violence in schools and society.

Some of the factors that may lead to absence of compassion and toleration include:

- Emotional pathology of students
- Easy access to weapons
- Lack of surveillance/supervision in schools
- Violence depicted in the media
- Violence depicted in the video games

There has been shown to be a direct relationship between violence depicted in media and violence shown by younger generation in real life. There is also a high relationship between children/students viewing violent video games and their violent behavior.

1. One way to curb violence therefore is to curb violent video viewing.
2. Another way to avoid and control violence in schools to teach students the value of compassion and tolerance.

Some psychologists put forward the view that compassion and tolerance should be taught in schools. They feel that compassion and tolerance come from character education. Character education aims at building certain positive qualities in students. These qualities include honesty, wisdom, kindness to others and self-discipline. To achieve these in students, some educational psychologists believe students should be taught moral reasoning, should be imparted with relevant broad knowledge, empathy, that is feeling for others, self-respect, kindness, and to have supportive and democratic attitudes.

This is all the more relevant to Pakistani school education scene, because Pakistan boasts of many diverse cultural units, including Punjabis, Baluchis, Sindhis and Pathans. So since Pakistan is proud to be a multicultural society, in any classroom in Pakistan, one would find cultural diversity amongst students. Thus there is greater need for compassion and tolerance in Pakistani school educational scene.

**Strategies for Cooperation**

Compassion and tolerance can be taught by direct means, where material related to tolerance is directly taught. It can also be taught by indirect means. We now turn to different strategies that build in structures to both social and cognitive learning.

**Jigsaw:** One direct method, as developed by some psychologists, is called the “Jigsaw”. Jigsaw is a method to develop cooperation and thereby develop tolerance in a diverse classroom situation where each student in the class is responsible for teaching one section of the lesson to another student. Each student therefore has to cooperate with another classmate of different racial background in order to learn the whole lesson. In this way, students confront complex, real life problems and not simplified worksheets. They learn by doing and teaching others. The students must take positions and argue for them. They may encounter different representations of the same information, i.e., graphs, databases, maps or interviews and have to integrate information from different sources. The students have a good chance of learning how to do library research by actually doing it.

**Reciprocal Questioning:** Reciprocal questioning involves a small group of three/four students asking each other relevant questions about the lesson, thus learning and cooperating at the same time. It requires no special materials or testing procedures. After a lesson or presentation by the teacher, students work in pairs or triads to ask and answer questions about the material. The teacher question stems then students are taught how to develop specific questions on the lesson material using the generic question stems. The students create questions and then take turns asking and answering. This process has proved more effective than traditional discussion groups because it seems to encourage deeper thinking about the material.

**Scripted Cooperation:** Another strategy in this context is called “scripted cooperation” wherein students work together on almost any task, including reading a selection of text, solving math problems or editing writing drafts. In reading, for example, both partners read a passage, and then one student gives an oral summary. The other partner comments on the summary, noting omissions or errors. Next the partners work together to elaborate on the information, i.e., create associations, images, mnemonics, ties to previous work, examples, analogies and so on. The partners switch roles of summarizer and listener for the next section of the reading and then continue to take turns until they finish the assignment.

### **Conflict and Negotiation**

Research shows that if students see their schools as places where some students are treated differently than others, then they are discouraged. However when they see personal improvement taking place, where they feel respected, where they feel they are supported by teachers, and when they are given more responsibility by teachers, students are encouraged they are then prepared to cooperate with others and work as a group or community. All groups may experience conflict, so is it within classroom and within schools.

Educational psychologist suggests five ways of dealing with conflicts in this regard.

1. Students jointly define the conflict. Separate the person from the problem and the actions involved, avoid win-lose thinking and get both parties' goals clear.
2. Exchange positions and interests. Present a tentative proposal and make a case for it; listen to the other person's proposal and feelings; and stay flexible and cooperative.
3. Reverse perspectives. See the situation from other person's point of view and reverse roles and argue for that perspective.
4. Invent at least three agreements that allow mutual gain. Brainstorm, focus on goals, think creatively and make sure everyone has power to invent solutions.
5. Reach an integrative agreement. Make sure both sets of goals are met. If all else fails, flip a coin, take turns, or call in a third party, a mediator.

Educational psychologist hold the view that when the above is done a community can be established of students and conflicts can be resolved by following these steps.

- Recognize and respect each other's rights.
- Do not accept violence in any form.
- Clearly define violence of students and others.
- Put strategies and programs for correction of the wrong in to action and operation.

All of the above strategies, research shows help in creating a learning community in the class and the school which then improves creativity and brings about tolerance in school and the class.

## STANDARDIZED TESTING I

All teaching involves evaluation. **Evaluation** is decision making about student performance and about appropriate teaching strategies in the context of educational psychology. **Measurement** on the other hand is evaluation in quantitative or numbers terms, the numeric description of an event or characteristic. Measurement tells how much, how often or how well by providing scores, ranks or ratings. Measurement also allows a teacher to compare one student's performance on one particular task with either a standard or the performances of the other students.

Evaluation and measurement require the use of numbers and simple and basic statistical techniques. So we need to get familiar with certain statistical terms and techniques in this context.

### Standardized Tests

For the purpose of evaluation or measurement, educational psychologists use standardized tests. Standardized tests are tests given under uniform conditions and scored according to uniform procedures to a large number of people in a country. Standard methods of developing items, administering the test, scoring it and reporting the scores are all implied by the term standardized test.

### What Do Test Scores Mean?

The test publishers provide one or more ways of comparing each student's raw score (number of correct answers) with the norming sample. Let's look at some of the measurements on which comparisons and interpretations are based.

### Measurement of Central Tendency and Standard Deviation

A **mean** is simply the arithmetical average of a group of scores. To calculate mean, all the scores are added and divided by the number of people who were tested. This procedure yields a single figure, the mean of the group. The mean offers one way of measuring central tendency, the score that is typical or representative of the whole distribution of scores.

When you have a large number of scores, there is the middle point or middle score of those large numbers of scores. The middle score in a series of scores is called the **median**.

In that large number of scores, there might be some scores that occur more frequently than others. The score that occurs most frequently in a series of scores is called the **mode**.

The **standard deviation** is a measure of how widely the scores vary from the mean. The larger the standard deviation, the more spread out the scores in the distribution.

### Types of Scores

**Percentile rank scores:** Another meaningful number in a set of large measurements is the percentile rank. Percentile rank is the percentage of those in a given sample who score at, or below an individual's score. A percentile rank of 50, for example means that a student has scored as much or better than 50% of students in a group or a class. Similarly a percentile rank of 90% means a student has scored as much or better than 90% of students in a group.

**Standard scores:** Another useful concept in this context is that of standard scores, these are the scores based upon standard deviation. A very common standard score is called the **z score**. A z score tells us how many standard deviations above or below the average, any given raw score is placed.

Because it is often inconvenient to use negative numbers, other standard scores have been devised to eliminate this difficulty. A **T score** is the standard score with a mean of 50 and a standard deviation of 10.

Thus a *T* score of 50 indicates average performance.

And last useful concept in this regard is the concept of **stanine scores**. This name comes from “standard nine”. Stanine scores are the whole number scores, from one to nine, each number representing a wide range of raw scores. So these can help to categorize a given set of scores into different categories. Each stanine score represents a wide range of raw score thus making categorization of score easy, making teachers and students view another student’s score, in more general terms.

We talked about mean, mode, median and standard deviation in relation to student’s scores. These calculations not only help categorizing a student on the basis of his scores but also help in giving a single, clear description of a group of students. Percentile ranks, Z score, T score, and stanine score make comparisons among students score more easy and meaningful.

## STANDARDIZED TESTING II

### Interpreting Test Scores

Before any test or measurement can be used in the class for the purpose of assessment, the user must make sure that the measure fulfills a number of conditions. Because in this regard one of the most common problem is the misinterpretation of scores.

Three factors are important in developing good tests and interpreting results: reliability, validity and absence of bias.

### Reliability

Reliability refers to a high positive correlation in test and retest scores. This may simply be understood in the following manner: -

Suppose you weigh yourself on a weighing machine on Monday morning and your weight comes out to be 120 pounds. Then you weigh yourself again on the same machine on Tuesday at the same place and in the same manner. And your weight comes out to be 400 pounds. Is your weighing machine reliable? Of course not, because a person cannot gain 300 pounds in twenty four hours. However if you weigh yourself on a machine on Monday and your weight is shown to be 100 pounds and then on Tuesday it also shows your weight to be 100 pounds, the weighing machine is reliable because it is showing consistent scores.

Reliability refers therefore to the consistency in test scores. Reliability of a measuring device can also be tested by another method. You may weigh yourself on one weighing machine; your weight comes out to be 100 pounds. Now you might weigh yourself on another weighing machine which has already been tested and found to be reliable. On the second machine your weight comes out to be the same as on the first machine that is 100 pounds. Now because the second machine has proven to be reliable, and your weight on both the machines is same, therefore the first machine is also reliable. This procedure is called alternate form reliability. When you compare and contrast one measuring device with another already proven to be reliable measuring device.

In educational testing, experts also use another method of testing reliability of a test. Let us assume that a test has one hundred items in it. Experts may administer the test to person and then compare his score on first fifty items with his score on the last fifty items. If the scores on first fifty items and the score on later fifty items are very close, or similar, the measuring device is considered reliable.

### Validity

Another criterion of a good measuring device is its validity. Validity refers to the degree to which a test measures what it is supposed to measure. If test items are relevant, the test is valid. Experts usually talk about content related validity, criterion related validity, and construct related validity. These are different ways that experts adopt to check the validity of a measuring instrument.

### Absence of Bias

Experts also expect that a measuring device must be free of any assessment bias. Assessment bias refers to qualities of an assessment instrument that offend or penalize a person or a group because of gender, race or ethnicity. Therefore experts use tests or measures which do not have any assessment bias.

### Types of Standardized Tests

Several kinds of standardized tests are used in schools today. There are three broad categories of standardized tests: achievement, diagnostic and aptitude (including interest).

### Achievement Tests: What Has the Student Learned?

The most common standardized tests given to students are achievement tests. These are meant to measure how much a student has learned in a given content area such as reading, comprehension, language usage, computation, science, social studies, mathematics and logical reasoning. Your students' examination reports during a school or college terms are examples of achievement tests.

**Diagnostic What Are the Student's Strengths and Weaknesses?**

If teachers want to identify specific learning problems, they may need to refer to results from the various diagnostic tests that have been developed. Most diagnostic tests are given to students individually by a highly trained professional. The goal is usually to identify the specific problems a student is having. Individually administered diagnostic tests identify weaknesses in learning processes. Diagnostic tests may assess or recall, the sequence of symbols, coordination in eye and hand movement, recognition of details in a picture and the like.

**Aptitude Tests: How Well Will the Student Do in the Future?**

Aptitude tests are meant to measure abilities developed over many years and to predict how well a student will do in the future at learning unfamiliar material.

## STANDARDIZED TESTING III

### Preparing for Tests

Those students who prepare themselves to take tests for the purposes of examination and promotion tend to perform better than those who do not take time out for such preparation. Proper preparation includes a number of things that a student may undertake to perform well in a test.

- One such undertaking is getting familiarity with the test material. Those students who are familiar, with the subject matter and have tackled similar materials in preparation, tend to perform better than others.
- The other related matter apart with familiarity with subject in this regard, is being familiar with the testing procedure. There are different testing procedures used by different teachers in different subjects. If the student is well aware and familiar with those procedures apart from his familiarity with the subject matter, then that procedural familiarity will help student perform well in a standard test.
- Research shows that those students who have an extensive experience in taking standardized tests, perform better in such test than others, all other factors, such as preparation, ability etc, being equal.
- Research also shows that a high degree of self confidence helps student perform better in tests. Conversely those students who have low confidence become fearsome, or those who panic in an exam, tend to performance poorly.
- Familiarity with similar questions as included in the exam helps students to perform better than not having familiarity with type of exam questions included in an exam.
- It is also shown during different experiments that brief orientation about how to take a test, and how to take an exam helps students to perform better than before.
- A different set of training regimen may also help students to perform better in exams. One such training module helps to improve general cognitive or thinking skills of students. Those with a trained thinking skills perform better than others.
- Again training in problem solving is another way to improve test scores. Another way to improve performance in exams is to teach or prepare students to carefully analyze questions at hand. This is done by teaching students to carefully consider all aspects of a question and then choosing the answer to it.
- Another technique is to see the relevant details and the irrelevant details of a question, and then address only the relevant ones.
- Another important strategy in this regard is to avoid impulsive answers and to focus on relevant materials to answer.
- And finally checking and rechecking the answer is an important strategy to improve examination performance.

### Portfolios

A portfolio is a systematic collection of work, often including work in progress, revisions, student selfanalyses and reflections on what the student has learnt. Written work or artistic pieces are common contents of portfolios but students might also include graphs, diagrams, snapshots of displays, peer comments or audio or videotapes, laboratory reports and computer programs, anything that demonstrates learning in the area being taught and assessed.

The following steps may show how a portfolio may be created.

1. A student should be involved in selecting the pieces that will be included in the portfolio.
2. It should include information that shows the student's self reflection and self criticism.
3. It should include a student's, activities and his/her learning.
4. It should show self-growth, improvement in academics, and his school performance.



5. Student should be encouraged and taught to make maintain his portfolios.

If all of the above are undertaken, preparing and keeping portfolios becomes in an important and useful activity in school learning.

## CLASSROOM ASSESSMENT AND GRADING I

### Planning for Testing

Research has shown a number of things about testing students for their academic achievement. Research has also clarified three useful things about testing.

1. Frequent testing encourages retention of information on the part of the students.
2. Tests promote learning if they are given soon after the students have learnt something new.
3. Cumulative testing is a key to effective learning.

Cumulative testing refers to the fact when testing involves presently learned material and previously learnt material.

Unfortunately, the curriculum in many schools is so full that there is little time for frequent test and reviews.

### Categories of Tests

Teachers have two broad categories of choices available to them for testing students.

1. Objective testing
2. Essay testing

### Objective Testing

Objective testing in relation to teaching in class means that the testing material is not open to many interpretations. It is therefore not subjective, or open to different kinds of answers. Multiple choice questions, matching exercises, true/false, short answers and fill in the blanks are all kinds of objective testing. Scoring of these tests is relatively straightforward compared to the scoring of essay questions because the answers are more clear-cut than essay answers.

### Multiple Choice Tests

Multiple choice tests can assess not only recall or recognition, but they also require a student to apply what he/she has learned. When writing a multiple choice test the aim of the teacher is to measure a student's achievement, and not his test taking or guessing skills.

### Prerequisites for Objective Test Construction

Teachers must keep the following in mind when making up multiple choice exams.

1. Students should not be tested for their guessing skills.
2. Questions should be simple and clear.
3. The problem in the questions should be stated in positive terms and not in negative terms.
4. Students should not be expected to make very fine choices and distinctions in answer choices.
5. A teacher should avoid exact wording as found in the text book.
6. Categorical words such as always, only, never, should be avoided.
7. The teacher should avoid the over use of such phrases as "all of the above", "none of the above".

### Essay Testing

The other choice in testing available to the teacher is using the essay type exam. Essay type exam requires a student to create his/her own answers. However this kind of testing poses a difficulty to the examiner that involves judging the quality of the answer.

### Prerequisites for Essay-Type Test Construction

In essay type question, the student should be clearly know what elements he is expected to cover in the answer. The student should know how extensive their answer should be and about how much time they should spend on each question. Time factor in an essay type exam is of crucial importance. Thus students should be given ample time to write the answer. However teachers must keep in mind that time pressure increases a student's anxiety. Therefore adequate time with frequent reminders during an exam must be given to the students.

Educational experts agree that combining essay type with short answer, objective type materials may help students to do well in exams.

### Evaluating Essay Tests

One problem with essay type exam is the problem of subjectivity in scoring. It was found in various researches that this problem of subjectivity in scoring was not confined to some subjects, but various subjects. The main difficulties were the individual standards of the grader and the unreliability of scoring procedures.

Subjectivity in scoring can be avoided by: -

- Constructing a proper, good answer.
- Remembering that a good, model answer is one that contains clear statements.
- Marks may be given to good organization of the answer.
- A teacher can have the exam double checked by another teacher without telling him the grades/marks already assigned by him.
- A teacher should make sure that while checking the papers he does not know to whom the paper being checked belongs. Anonymity of the examinee ensures fairness in marking on the part of the teacher.

## Lesson 44

### CLASSROOM ASSESSMENT AND GRADING II

Educational psychologists agree that assessment of students is one of the most complex tasks of teaching. Teachers in assessing their students need to know a number of things.

1. What the students have learned.
2. What can the students do with their gained/learned knowledge?
3. Teacher should be knowledgeable about the subject matter he/she is assessing students.
4. Teacher needs to be familiar with the purposes of assessment.
5. Teacher needs to know how to assess.
6. Teacher should know the value of assessment in the overall educational effort.
7. Teacher should be familiar with different assessment techniques, i.e., essay type, MCQs, shortanswers etc.
8. Teacher must know how assessment affects students.

All of above requires a keen and sensitive mind on the part of the teacher. And it requires an up-to-date knowledge of assessment techniques.

### Feedback

Feedback or knowledge of results is a very important factor in teaching. Feedback shows to the students why the students are wrong, if they have erred in answering a question. Showing or pointing out the reasons of

students mistakes sensitizes students towards committing mistakes and helps them in future to avoid making mistakes/errors. Experts are often asked what are the most effective ways of providing feedback to students.

### **Strategies of Effective Feedback**

There are some strategies of effective feedback. Feedback should

1. be provided in written comments.
2. be personalized rather than impersonal.
3. include constructive criticism, should not criticize for the sake of criticism, but with the purpose of effecting improvement in the performance of a student.
4. contain specific comments on errors committed by the student.
5. point out and comment upon faulty strategies adopted by students for writing the answers.
6. contain suggestions on how to improve.
7. include comments on positive aspects must also be a part of the feedback.

### **Grades and Motivation**

Educators now agree that assessment should be done in such a way that it motivates students to learn, to know and not only to achieve high grades.

Educators have also been interested in knowing if there is a difference between working to achieve a grade, and working to know. The answer lies, they feel, in the fact how a teacher grades his students. If the teacher only tests superficial, simple knowledge of his students, without making an effort to check the depth and details of knowledge of his students, then students are less motivated to learn and more motivated to achieve high grades. The aim of the teacher should also be motivating students to learn and not only to score higher grades.

### **Fear of Failure**

Research shows that high grades may encourage students where as low grades discourage them to put in extra effort at work. Research also shows that fear of failure affects motivation and student input, but fear of failure can have both negative and positive effects, depending upon the personality of students and situational factors. Fear of failure can motivate students to put in extra effort to avoid failure and it can also, in some cases, be counterproductive and de-motivate students to work harder.

### **Improving Academic Achievement**

Experts recommend different ways of improving academic achievement of students: They include:

- Teachers should avoid high praise for work of students that strictly confirms to text book answers.
- Give the students a fair chance, especially in the beginning of a course, to be successful.
- Make the grades as meaningful as possible.
- Create a balance between oral and written feedback.
- Judge students and award grades on more than one criterion.

When teachers undertake all of the above they help students to be highly motivated and to learn purposefully.

## CLASSROOM ASSESSMENT AND GRADING III

While assessing students a teacher has two types of standards to follow and emulate. He can choose anyone of the criterion to assess and grade students. The first one of those two is what is called norm referenced grading.

### Norm Referenced Grading

Norm referenced grading refers to the fact when a teacher assesses his students in relation to one another. A student compares and contrasts anyone students score in an exam with the score of another student. If a student studies very hard and almost everyone else does too, the student may receive a disappointing grade, perhaps a C or D. However one big disadvantage of this type of grading or scoring that it damages relationships between students. Some students may become resentful to other students with whom their score or grade is being compared and contrasted.

### Grading on the Curve

Some teachers may also use what is termed as **grading on the curve**. This is a variation of norm referenced grading that compares a student's score on a test with the average group or class score. It fixes the average score and then compares a given student's score against that average score.

### Percentage Grading System

Teacher can assign grades based on how much knowledge each student has mastered, what percentage of the total knowledge he or she understand. To do this, the teacher might score tests and other class work with percentage scores (based on how much is correct, 50%, 85% etc.) and then average these scores to reach a course score. These scores can then be converted into letter grades according to predetermined cutoffs. Any number of students can earn any grade. This procedure is very common. You may have experienced it yourself as a student.

While grading, teachers must keep in mind the influence of what is called **Halo effect**. Halo effect refers to a general tendency on the part of a teacher to grade or assign marks on a test to a student based upon the teacher's impression of the student rather than his actual performance on a test. Halo effect may be positive or negative. It is positive when more marks are given on the basis of impression and it is negative when marks may be deducted on the basis of negative impression of a student. The teacher needs to be careful and try to avoid both of these tendencies.

Once the students are graded these grades have to be conveyed to the parents, teachers, and other students.

### Beyond Grading: Communication

While communicating the teacher must keep the following in mind.

- The student's files/report cards must be appropriate.
- The reports cards must be accurate.
- The report cards must be supported by evidence.
- The report cards must be appropriate, such that the result must be communicated in non-technical easy terms for parents to understand.
- Notes attached to report cards.
- Phone calls that may convey important news and views to parents and guardians.
- The result may be put on school or class web pages for parents/guardians.
- Student portfolios may be exhibited for parents/guardians to see.
- Result can be conveyed through open houses.

- And finally in special cases school teachers may carry out home visits to student's houses, when some disability may prevent parents/guardian to meet with teachers.

**Important Things about Conveying the Results**

Experts recommend that while conveying results the teachers should

- Plan ahead for such communication
- Begin communication on a positive note
- Listen to parents/guardians carefully
- Plan and carryout follow-up contacts
- End on a positive statement

The more a teacher follows the above recommendations the more helpful and successful he will be.