**Lesson no 23**

# DISCOVERY LEARNING….CONT

## Topic 133: Jerome Bruner

- He wrote a book: **On Knowing: Essays for the Left Hand** and discussed in detail how people construct knowledge based on prior experiences.

**In most matters of achieving mastery, we also want learners to gain good judgement, to become self-reliant, to work well with each other. And such competencies do not flourish under a one way "transmission regimen". (Bruner)**

## Topic 134: Theoretical approach

Bruner viewed the goal of education to be intellectual development, as against rote memorization of facts:

- Curriculum to help develop problem solving skills through inquiry and discovery.
- Curriculum to be designed so that the mastery of skills at one level leads to the mastery of skills at the next level.
- Subject matter to be in line with the way the learner views the world.
- Teaching by way of organizing concepts and learning through discovery.
- Culture forms concepts through which people organize views about self and others, and the world they live in.

## Topic 135: Stages of Representation 1

Bruner put forwarded that:

The intellectual development progresses through three stages:

- **Enactive**
- **Iconic**
- **Symbolic**

However unlike the Piaget's stages, Bruner did not insist that these stages were necessarily age-specific or are unvarying in nature.

**Enactive (birth- 3)**

Action based: (concrete)

- Children view their environment in terms of what they can do with it.
- At this stage demonstrating to a child is most effective. A child will better show than tell.

**Topic 136: Stages of Representation 2**

**Iconic (3-8 years)**

Image-based: (pictorial)

- Children visualize how to do something without actually doing.
- View things as they perceives their environment, not how it is explained to them.

**Symbolic (8-up)**

Language-based: (abstract)

- Knowledge is stored mainly as words, mathematical symbols or in other symbol systems.

**Topic 137: Jerome Bruner and Education**

- Unlike Piaget and Vygotsky, neither of whom tailored their work directly towards education, Bruner's work relate to education process in every respect.
- Bruner's theory is most useful in teaching mathematics – which is primarily conceptual – it begins with a concrete mode and progresses to an abstract or representation.
- Unlike Piaget, Bruner believes that teachers can help sped up the child's process of cognitive development.
- Like Vygotsky, Bruner believes that scaffolding provided by more competent one is an essential part of the teaching process.

Accordingly,

- Role of teacher is seen as important.
- And so as the role of language and communication that facilitates scaffolding and use of language (symbolic mode) by the child.

**Topic 138: Critical Perspectives**

**Support**: this theory:

- Actively engages students in the learning process.
- Motivates students to participate.
- Encourages autonomy and independence.
- Helps develop creativity and problem solving skills.
- Provides an individualized learning experiences.

**Criticism**: this theory:

- May be overwhelming for learners who need more structure.
- May allow for possible misunderstanding.
- May prevent teachers from gauging whether students are having problems.

**Lesson no 24**

# ADLESCENT BRAIN

## Topic 139: Introduction

From Quite Some Time Ago

"….. the frivolous youth of today, for certainly all youth are reckless beyond words…. When I was a boy we were taught to be discrete and respectful of elders but the present youth are exceedingly wise and impatient of restraint".

Attribute to: Hesiod; 8th Centaury B.C.

What is happening to our young people?

They disrespect their elders, they disobey their parents. They ignore the law. They riot in the streets inflamed with wild notions. Their morals are decaying. What is to become of them?

Attributed to Plato about 400 BC.

## Topic 140: A Difficult Time

**Adolescence**

- A transition from childhood to adulthood.
- The psychological, emotional and social changes of puberty.
- The teenager changing from a child into an adult.
- Transitions are difficult – a person in transit is not really anywhere.
- He is in one place at one time and a different place at a different time – and belongs nowhere!
- Early adolescence – 11 to 13 years old.
- Middle adolescence – 14 to 17 years old(continues to be pushed earlier, 9-10….)
- Late adolescence (early adulthood) – 18 to 20 years old (continues to be pushed later, 21-24….)
- Brain reaches 90% of its full size by age six – then skull thickens.

- Then undergoes a great reorganization between age 12 & 20 and continues till 25.
- As such, some essential parts of brain are still developing during adolescence.

## Topic 141: Prefrontal Cortex

- The CEO of brain
- - Control thoughts and thus everything
- Located in front of the brain just behind forehead

Also known as the seat of good judgment, controls:

- Reasoning ability
- Goal and priority setting
- Ability to make sound judgments
- Planning/organizing multiple tasks
- Behavior
- Self control
- Emotional control
- Determining right from wrong
- Determining cause and effect relationships
- This section of brain develops last (by age 25)

As such they are prone to errors of judgment.

- Are high risk-takers
- They are not reckless because they underestimate risks, but because they overestimate rewards – or, rather, find rewards more rewarding than adults do.

## Topic 142: Cerebellum

- Located at the back of the brain
- Part of the brain that changes most during the teen years
- Not finished growing even well into the early20s
- Involved in the coordination of our muscles
- Responsible for many learned physical skills such as posture, balance and coordination

- Action like playing guitar takes effort first – but becomes easier with practice because the memory of how to do it is stored in the cerebellum
- Also known as "little brain" – coordinates cognitive processes (thinking processes)
- Physical activity enhances development of the cerebellum, so….
- Sports/physical activities are good for the brain

**Topic 143: Amygdala is unfinished, too!**

- Located at the side of the brain, above ear, deep inside
- Links emotions with sensory inputs from the environment
- Triggers the emotions of rage, fear, reward, aggression and attraction – instinctive emotional reactions
- Matures before the frontal cortex
- So, adolescents respond with emotional reactions before reasoned ones
- This accounts for impulsive and risky behavior

Behavior effects of Amygdala

- Erratic behavior
- Compulsive behavior
- Pleasure/ thrill seeking

Solutions

- Keep a level head. Remain calm.
- Sympathize. Say, "Unfortunate".
- Remain firm – this does not excuse behavior.

**Topic 144: Putting it all together….**

- The physical makeup of the brain affects learning and retention.
- When the principles of mindful instruction are in place students are more successful.
- A brain-compatible classroom is one that recognizes the physical and emotional needs of the brain in relationship to learning.

- Learning is biological and active – mind/body/spirit.
- Exercise improves cognitive function.
- Emotion increases learning.
- Knowledge about changes to adolescent brain helps design truly effective instructions.

**Topic 145: Is Learning Real?**

- When I think of my own childhood, I remember being taught about the weather through posters on the wall that had drawings of the seasons.
- I learned that snowfalls in the winter, the leaves change colors in the fall, flowers blooms in the Spring, and it is sunny in the summer.
- I learned all of this despite the fact that where I grew up in Karachi it had never snowed, the leaves never really changed and there always seemed to be flowers blooming. Why did what I learned in school not match what I saw outside? Was what I was learning real?
- From the standpoint of the child, the great waste in school comes from his inability to utilize the experience he gets outside while on the other hand he is unable to apply in daily life what he is learning in school. That is the isolation of the School – its isolation from life. (John Dewey, 1916)
- Real learning has to relate student's work to their lives, experiences and thoughts.
- This process happens if the students combine deep learning with self regulated learning.
- This is the process of authentic learning.

**Lesson no 25**

# AUTHENTIC LEARNING

## Topic 146: What is Authentic Learning?

- A pedagogical approach facilitating students to explore, discuss and meaningfully construct concepts and relationships in contexts that involve real-world problems and projects that are relevant to the learner. (Donovan, Bransford & Pellegrino, 1999).

It is defined as:

- Learning that is implanted into meaningful, real – life situations.
- Learners presented with realistic problems/projects to investigate and converse in ways applicable to their lives.

The learning environments are multidisciplinary similar to a real world application (managing a city, building a house, flying an airplane, setting a budget, solving a crime)

Students build on skills for real life success: e.g. judgement, patience and flexibility.

## Topic 147: History of Authentic Learning

- Concept has been around long since apprentice-mentor relationship was the main method of training in 18$^{th}$ century.
- Allows pupils to become cognitive apprentices to the experts and learn what happens in the real world. Lombardi (2007).
- Descartes first proposed the idea of authenticity.
- Rousseau supported by saying that authenticity is voice of nature within us.
- Herder concludes that authenticity changes to an inner voice, developed through experience.
- Grimmett combines the three ideas and concludes that:
  Knowledge is deeply rooted in consciousness, experience and reflection.
  This is how authenticity is defined today.

## Topic 148: Authentic Approach

**Authentic**

Students are presented with problem solving activities that incorporate authentic real life questions and issues.

**Hands On – students perform, construct meaning and acquire understanding.**

As students put projects together, create crafts or use familiar materials in new ways, they are constructing meaning. Hands on activities activate kids brain.

**Minds On – students develop thinking processes through activities.**

Combining activities of movement, talking and listening activates multiple areas of brain.

"The more parts of your brain you use, the more likely you are to retain information".

## Topic 149: Principles of authentic Learning 1

**Four principles:**

1. Activity involves real world problems.
2. Use open-ended inquiry, thinking, skills and metacognition.
3. Students engage in discourse and social learning.
4. Students direct their own learning.

**Real World Problems**

Students focus on a real problem and their engagement holds the possibility of having an impact outside the classroom. E.g.

- Collection of water quality samples in teaching science.
- Analyzing documents for teaching history.

**Inquiry and Thinking skills**

Students to use higher levels of thinking. E.g.

- For art class, reviewing visual and textual information in advertisements.

## Topic 150: Principles of authentic Learning 2

### Dialogue in a community of learners

- Students and industry leaders (where the project is based) to link up and share the investigation to solve a problem.
- For example, an online community linking students with research scholars to collect data about a research project.

### Students directed learning

- Students define the problem and select the line of action for its solution.
- For example, student making their own interpretations of literature and art.
- Students to interact with the wider community and reflect upon their experiences.

## Topic 151: Authentic Guidelines

- Authentic learning is a pedagogical model based on situated learning theories, which are founded on a constructive philosophy of learning.
- It is a process involving the dynamic interactions between the learner, the task and the environment.
- Philosophically and pedagogically authentic learning is related to strategies such as: personalized learning, community based learning, project based demonstrations of learning, Capstone project, personal learning plans and portfolios.

**Lesson no 26**

# AUTHENTIC TASKS

## Topic 152: Authentic Tasks 1&2

### Authentic task 1

1. Must have real relevance

The activities match the real world tasks of professionals in practice. They are realistic and not realistic.

The tasks given to students have to be ones that are being faced in the work place

### Authentic task 2

2. Must be ill defined

Tasks open to multiple interpretations

Requiring students to find their own unique tasks and sub-tasks to complete the major task

To challenges cannot be solved easily by the application of an existing method

## Topic 153: Authentic Tasks 3, 4 & 5

### Authentic Task 3

- Complex tasks to be investigated over an extended period of time.
- Requiring significant investment of time, efforts and intellectual resources.

### Authentic Task 4

Authentic learning allows students to examine the tasks from a variety of theoretical and practical perspectives, not just one perspective.

### Authentic Task 5

Collaboration

Collaboration is integral to the task, both within the course and the real world.

## Topic 154: Authentic Tasks 6, 7 & 8

**Authentic Task 6**

**Reflection**

This task allows the learner to make choices and reflect on their learning as an individual or a team.

**Authentic Task 7**

**Must be integrated**

The task encourages the students to adapt diverse roles and think across different subject areas.

**Authentic Task 8**

**Integrated Assessment**

Assessments are not only summative in authentic activities but also reflect real-world evaluation processes.

## Topic 155: Authentic Tasks 9 & 10

**Authentic Task 9**

**Create polished products**

Authentic activities end in creation of a whole product which is valuable and useful on its own, rather than creating a sub-step of something else.

**Authentic Task 10**

**Multiple interpretations and outcomes**

Authentic activities as a whole allow for diverse interpretations and competing solutions instead of just yielding one correct answer.

Authentic tasks create a bridge between what is learned in the classroom and why this knowledge is important to the world outside of the classroom. Authentic tasks are not meant to replace current classroom practice, but to provide another strategy to meet learning goals and measure student understanding.

**Topic 156: Authentic Learning**

**Conclusion**

**Rationale for using AL**

- It is a key concept in Constructivists theory.
- It connects new knowledge to existing knowledge by encouraging students to make direct connections between their new learning and the real world in which they live.

**Criticism**

Instructionally teachers may require:

- More planning and preparation
- Sophisticated instructional techniques
- Revise lesson plans substantially
- Logistically more complexities

**Standpoint**

Authentic learning is an effective instructional strategy to be used with multiple age groups in multiple disciplines. Technology can enhance the authenticity of learning experiences by making them more accessible to the pupils of modern times.

**Lesson no 27**

# TRANSFORMATIONAL LEARNING I

## Topic 157: Transformational Learning

### The Landscape

- In childhood learning is formative – derived from formal sources of authority and socialization.
- In adulthood learning is transformative – as adults are more capable of seeing distortions in their own beliefs, feelings and attitudes.
- "We are caught in our own histories" (Mezirow, 1991)
- We individually assimilate the culture of which we are a part.
- We uncritically adopt characteristics from primary child care givers in childhood.
- We have many intentionally and unintentionally learned theories about the world, some of which may no longer be serving us well.

## Topic 158: Conceptual Framework 1

- Most of the time when we learn new information, it fits into the existing patterns or pathways in our brains.
- It fits with what we already know.
- If you already play a musical instrument, say Guitar.
- When you learn a new piece.
- Your new learning fits with what you already know.
- About notes, scales, rhythm and how musical sound is created.
- If you learn a new instrument, say Sitar
- You will transfer some of what you know to the new context.
- This new instrument may enhance your skill or offer new ways to create sound.
- But it generally will not challenge or cause you to question what you previously understood about music.

## Topic 159: Conceptual Framework 2

- If you experience something that causes you to question what music is and how it is created, that could be the trigger for a transformative learning experience.
- If what you learn changes the way you understand music itself, then you have a new story frame about what music is. This is a transformative learning experience.
- And seeking of others' experiences, perspectives and stories that will lead to further transformative learning.
- Critical reflection is the key to transformation as it challenges learners' assumptions and pushes to reconsider and reframe them.

## Topic 160: Mezirow's Theory

- 1978
- 1991

In 1978 Jack Mezirow introduced transformative learning theory to help explain how adults change the way they interpret the world.

"The process of using a prior interpretation to construe a new or revised interpretation of the meaning of one's experience in order to guide future action" Mezirow, 1991: 162

**Human Communities and the Learning Process**

- Human begins to show a significant need to understand the meaning of their experience.
- We seek agreement on the meaning and justification for our understandings and beliefs.
- We seek more functional beliefs.
- We want to act on our beliefs.

## Topic 161: Mezirow's Theory (Operational Parameters)

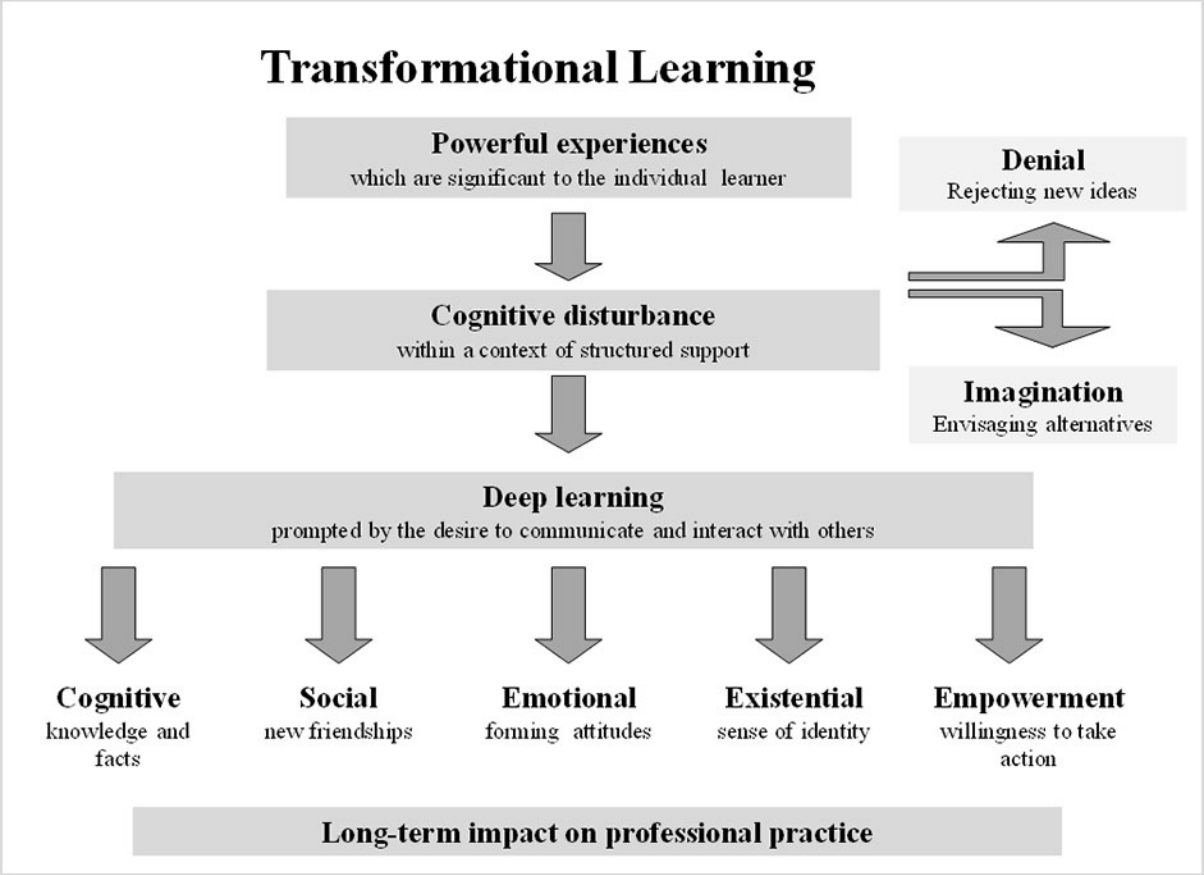
Before there is transformative learning:

- There is discomfort because something does not with a person's known stories.
- The new information is connected with deeply felt experiences, emotions and images.

- The person is open to new meaning and new stories rather than rejecting information and experiences that "do not fit".

Transformative learning has two learning domains:

1. Building a new story for new information which can lead to re-examination and modification of old stories.
2. Seeking of others' experiences, perspectives and stories that will lead to further transformative learning.




## Topic 162: Building a New Story

- What do adults do when confronted with experience or information that does not "fit" into any of our known story pathway?
- When the established brain patterns are not adequate?

- Adults try to make the new information fit, checking to see if existing story pathways can hold the new information.
- Sometimes they can.
- And that modifies the story so that similar information makes sense the next time.
- And sometimes the new experience makes an adult question the story (understanding) they hold about a particular subject.
- They might ask: is the story I know inaccurate?
- Do I need a new story to make sense of this?
- Adults have the developmental capacity to question the very brain structure they have developed earlier to store and make sense of information and experiences.
- They must have the ability to experience transformative learning.

**Lesson no 28**

# TRANSFORMATIONAL LEARNING II

## Topic 163: Seeking of Others' Experiences

- Adults also have the ability to seek transformative learning experiences by seeking an encounter with information that does not fit into their previous story patterns.
- This can happen when we truly listen to the stories of others whose life experiences are different from our own.
- As we listen to, read, watch on film or otherwise encounter something unfamiliar, we can experience a dissonance.
- Or disconnect between what we know and understand and the new piece of information.
- This experience of dissonance is especially powerful if it is connected with a strong emotional response to new information-grief, joy, empathy, etc.

## Topic 164: Domains of Learning

There are two domains of learning in Mezirow's Theory:

- Instrumental learning is learning to control and manipulate the environment or other people, e.g. task oriented learning (cause/effect).
- Communicative learning is learning what others mean when they communicate with us. It involves feelings, intentions, values, moral issues and meanings.

## Topic 165: Key Points in TLT 1

- Constructivist perspective of reality.
- Defines learning as making meaning of experience.
- Adults make meaning of experiences by examining, questioning, validating and revising beliefs, values, attitudes and feelings.
- Interpretations of experience are called meaning structures.
- Meaning structures filter and provide the context for understanding experience.

**Meaning structure consists of:**

- Points of view
- habits of mind
- Frames of reference

**Topic 166; Key Points in TLT2**

**Point of View:**

- Consist of meaning schemes: specific attitudes, knowledge, beliefs, value judgements and feeling involved in making interpretations.
- Transformed on critical reflection on content of problem or the process of problem solving.

**Habits of mind:**

- Clusters of meaning schemes which constitute an overarching view or a rule system for guiding behaviour and action.
- Transformed on critical reflection on the premise of a problem.

**Frames of Reference:**

- Involve orienting habits of mind and resulting points of view. They shape, delimit and often distort the way we make meaning of our experience.
- Derived from the culture, language and the habits of principal caregivers.
- Frame of reference include values, affective dispositions, moral and aesthetic preferences, paradigms, learning preferences and sense of self.

**Topic 167; Criticism**

- Mezirow gives too much emphasis to critical reflection; reflection alone does not result in transformative learning.
- Mezirow does not address the role of affective learning; since emotions can be hard to manage in learners especially where there is critical awareness and to change this is problematic.

- Transformative learning may require higher levels of cognitive functioning that most adults cannot achieve.
- Transformation is not always positive or transformative; pupils have to be prepared for either a positive or negative outcome.
- The hardest step of transformative learning is to change invalid assumptions and behaviors based on them.

**Topic 168: Final Outcome**

- The outcome of transformational learning is development that is irreversible; we do not go back to levels of less understanding.
- Transformational learning change people. They are different afterward, in ways they and others can recognize.
- Transformative Learning: It is about YOU!

**Lesson no 29**

# COLLABORATIVE AND COOPERATIVE LEARNING I

## Topic 169: Collaborative and cooperative learning

### Introduction

**Teaching vs. Learning**

- John Amos Comenius, a century scholar; summarized the approach that teaching should follow, "The main objective is to find a method by which teachers teach less but learners learn more", proving that current problems have noble pedigrees.

**Definition**

- An instruction method in which learners work in groups towards a common academic goal.
- **"Collaborative learning is an umbrella term for a variety of educational approaches involving joint intellectual effort by students, or students and teachers together".**

**(Smith and McGregor, 1992)**

## Topic 170: Philosophy

- Interaction and personal lifestyle.
- Individuals responsible for their actions and learning.

- Show respect for peer's abilities and contributions.
- Share authority and responsibility.
- Cooperate not compete.
- Learners use existing cognitive structures.
- Or construct new.
- Learners are active receivers of knowledge.
- Teaching learning process engages all stakeholders.

**Topic 171: Widespread Use**

Based on theory and validated by research.

Amount, breadth, generalizability and applicability provide validation.

Variety of cooperative learning methods available.

In collaborative learning students team together to explore a significant question or create a meaningful project e.g.

- Group of students discussing a lecture.
- Students from different schools working together over the internet on a shared assignment.

Collaborative learning is also called cooperative learning, collective learning , learning communities.

- Because they all work together towards a common goal.
- They all incorporate group work.
- Collaboration is more than cooperation.

**Topic 172: Collaborative Approaches**

- Cooperative learning is a specific kind of collaborative learning.
- Students work together in small groups on a structured activity.
- Cooperative groups work face to face and learn to work as a team.

- They are individually accountable for their work and the work of the group is also assessed.
- In cooperative learning teacher is still in control, whereas in collaborative learning, students are fully responsible.


## Topic 173: Elements of Collaborative Learning 1

1. **Positive Interdependence**

   Each student's contribution essential for group success.

   Interdependence occurs when students cannot succeed unless all their group members also succeed.

   Sink or swim together!

2. **Face-to-face interaction**

   Members provide feedback.

   Teach and encourage one another.

   Discuss concepts being learned.

   Cannot present with past learning.

   Promote each others success.

3. **Individual accountability**

   Ensuring each member completes the assigned task.

   Students as checker.

   Students teach others what they learned.

**Lesson no 30**

# COLLABORATIVE AND COOPERATIVE LEARNING II

## Topic 174: Elements of Collaborative Learning 2

### 4. Use of Collaborative Skills

- Leadership
- Decision making
- Communication
- Conflict management skills
- Trust building
- Mutual understanding

### 5. Group Processing

- Team Members:
- Set group goals.
- Periodically assess what they are doing well as a team.
- Identify changes to be made to function more effectively in the future.

## Topic 175: Collaborative and Cooperative Learning

### Major Phases

1. Teacher clarifies goals, provides a hook and introductory information.
2. Organize student teams with clearly defined roles.
3. Facilitate team activities including academic learning, social skills and cooperative behavior.
4. Assess student knowledge throughout the process or by team presentation.
5. Recognize both group and individual efforts such as active participation and taking responsibility for learning.

## Topic 176: Collaborative Learning Strategies

1. **Think pair share**

   The instructor poses a question and gives students time to think.

   This think time can be spent writing also.

   Students turn to a partner and share their responses.

   During the third step, student responses can be shared within a four-person learning team, within a large group, or with an entire class during a follow up discussion.

   Students learn by reflection and by verbalization.

2. **Simple Jigsaw**

   The instructor divides the topic into four or five parts with all stude4nts from each "learning team".

   These volunteers become "experts" on one of the parts (that is ¼ of the whole)

   Expert teams work together to master the fourth of the material.

   They discover the best way to help others learn it.

   Experts reassemble in their home "Learning Team" where they teach the other group members.

## Topic 177; Benefits of Collaborative Learning 1

### Social Benefits:

- CL helps develop a social support system for learners.
- Builds diversity understanding among students and staff.

### Academic Benefits:

- CL promotes critical thinking skills.
- Involves students actively in the learning process.
- Classroom results are improved.
- Models appropriate student problem solving techniques.

## Topic 178: Benefits of Collaborative Learning 2

Collaborative Learning:

- Promotes students learning and academic achievement.
- Enhances student satisfaction with their learning experience.
- Help students develop skills in oral communication.
- All group members gain from each others efforts.
- Recognize that all group members share a common fate.
- All group members proudly and jointly celebrate when a group member's achievement is recognized.

**Topic 179; Challenges**

- Rewarding opportunity but full of challenges.
- Engaging students in group activity is hard work.
- Requires rethinking of course content and time allocation of syllabus.
- Tension between the process of student learning and content coverage.
- Classroom roles change.
- Complex roles and responsibilities of students and teachers.
- Power relationships are questioned or reshaped.
- Constrained by the traditional structures and cultures of the organization.

**Topic 180; Collaborative and cooperative Learning**

**Critical Perspectives**

Critics identify weaknesses:

- Teacher escape responsibility.
- Teaching others place burden on students.
- Stronger students are left to teach weaker students.
- Focus on the task at its most basic level.

**Lesson no 31**

# PROBLEM BASED LEARNING

## Topic 181: Problem Solving

### What is problem?

A problem is a situation in which one has a goal but must find a means for reaching it.

(Chi & Glasser, 1985)

### What is problem solving?

Problem solving refers to the effort to achieve a goal for which there is no automatic solution.

## Topic 182: Problem based Learning

### Introduction

### Definition

PBL is an instructional strategy in which students work cooperatively to investigate and resolve an ill-structured problem based on real-world issues or situations.

PBL is a style of active learning students develop:

- Flexible knowledge.
- Effective problem solving skills.
- Self directed learning.
- Effective collaboration skills and intrinsic motivation.

## Topic 183: The Flow of PBL

According to Stepien & Gallaghar:

- Problem engagement
- Inquiry and investigation
- Problem resolution

- Problem debriefing

## Topic 184: Problem based/Project based

Problem based and project based learning have much in common both:

- Involve realistic problems and solutions.
- Are based on authentic educational goals.
- Include formative and summative assessments.

## Topic 185: Why use PBL?

- It represents the way learning occurs in the world outside the classroom.
- Learning occurs only within the context of activity and is securely tied to the situation in which it occurs.
- It increases the likelihood of transfer.
- Transferable learning experiences occur in an environment characterized by meaningful activity, expert guidance and knowledge building collaboration.
- It promotes desirable students outcomes:
    - Intentional learning
    - Relational understanding
    - Critical thinking
    - Creative thinking
    - Effective collaboration
    - Elastic communication
- PBL considered inappropriate for subjects like mathematics.
- Success of PBL is not measureable by standard measuring tools.
- Final product of the project may minimize the content focus of the project.
- A teacher adopting a PBL approach may not be able to cover as much material as a conventional lecture-based course.
- Implementing PBL can be very challenging it requires a lot of hard work and planning for the teacher.

**Lesson no 32**

# BLOOM'S TAXONOMY I

## Topic 187: Introduction

Bloom classified learning into three domains (categories):

1. Cognitive – mental skills (knowledge)
2. Emotional – growth in feelings or emotional areas (attitudes or self)
3. Psychomotor – manual or physical skills (skills)

## Topic 188: Cognitive Domain

There are six levels of Blooms cognitive domain.

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

## Topic 189: Bloom's Taxonomy

### Knowledge

Students recall or recognizes information, ideas and principles in the approximate form in which they were learned.

**Examples:**

- Define a term.
- Recite a policy.
- Know the safety rules.
- Knowledge of major ideas, mastery of subject matter.

**Potential activities:**

- Make a story map showing the main events of the story.
- Make a time line of your typical day.
- Write a list of keywords you know about ….
- What characters were in the story?
- Make a chart showing….

## Topic 190: Comprehension

**Comprehension** is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects).

**Examples:**

Rewrite the principles of test writing. Explain in one's own words the steps of performing a complex task. Translate knowledge into new context. Understand information. Interpret facts. Infer causes. Predict consequences.

**Potential activities**

- Write in your own words…
- Draw pictures to illustrate a particular event in the story.
- Illustrate what you think the main idea may have been.
- Write and perform a play based on the story.

## Topic 191: Application

Application denotes the ability to use learned material in a context different from the one in which it was learned.

- Application of such things as rules, methods, concepts, principles, laws and theories.

**Topic 192: Analysis**

Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood.

- Learning outcomes represent a higher intellectual level than comprehension and application because these require an understanding of both the content and the structural form of the material.

**Potential activities:**

- Use a Venn diagram to show how two topics are the same and different.
- Design a questionnaire to gather information.
- Make a flow chart to show the critical stages.
- Draw a graph.

**Lesson no 33**

# BLOOM'S TAXONOMY II

## Topic 193: Synthesis

Synthesis means the ability to put parts together to form a new whole.

- Production of a unique communication( theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information)

**Examples**

Write a company operations or process manual….

Integrate training from several sources to solve a problem.

Revised and process to improve the outcome.

**Potential activities:**

- Invent a machine to do a specific task.
- Design a robot to do your home work.
- Design a monetary system.
- Sell an idea.

## Topic 194: Evaluation

Evaluation is about the ability to judge the value of material (statement, novel, poem, research report for a given purpose).

- The learner makes decisions based on in-depth reflection, criticism and assessment.

**Examples**

Select the most effective solution.

Hire the most qualified candidate.

Explain and justify a new role.

Making new rules.

**Potential activities**

- Write a letter to the editor.
- Prepare and conduct a debate.
- Prepare a list of criteria to judge…
- Write a persuasive speech arguing for/against….
- Prepare a case to present your views….

## Topic 195: Bloom's Revised Taxonomy

- One of Bloom's students, Lorin Anderson, revisited the learning taxonomy in the mid-nineties and made changes in terminology, structure and emphasis.
- This new taxonomy reflects a more active form of thinking and is considered more accurate.

## Topic 196: What is the Difference?

**Nomenclature**

- Old taxonomy used nouns to describe the levels of thinking.
- New taxonomy uses verbs to describe the levels of thinking.

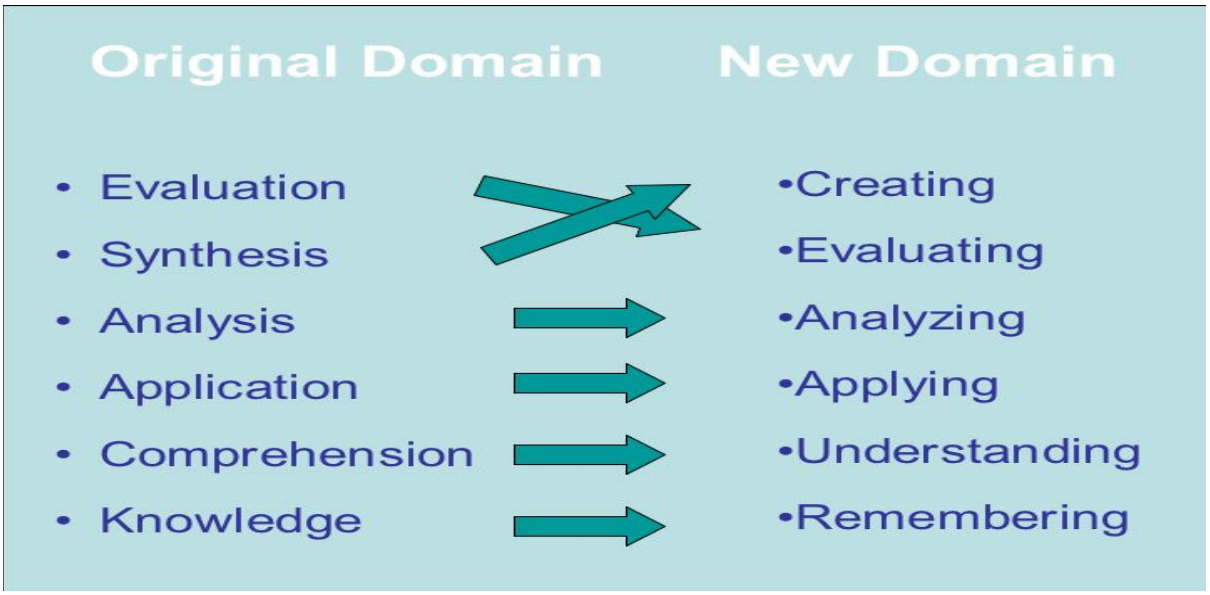
**Structure**

- Old taxonomy (one dimensional using the cognitive processes)
- New taxonomy (two dimensional using the knowledge dimension and how it interact with the cognitive process).

**Emphasis**

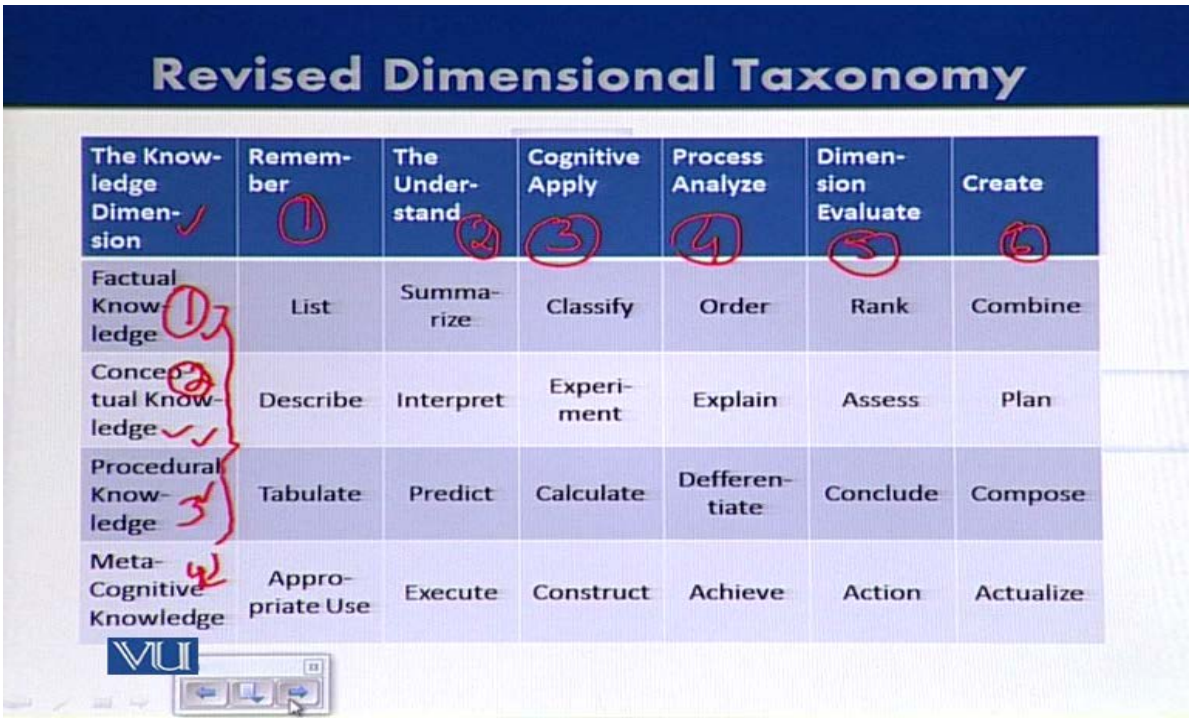
New taxonomy

- Emphasis is placed upon its use as a more authentic tool for curriculum planning, instructional delivery and assessment.




**Topic 197: Revised Dimensional Taxonomy**

The **knowledge dimension** represents a range from concrete (factual) to abstract (metacognitive).



**Topic 198: Bloom in Classroom**

- The reason that some teachers fail to move students up the levels of Bloom's taxonomy are many.
- For example a teacher might have low expectations concerning the student's abilities.
- Education must be increasingly concerned about the fullest development of all children and youth and it will be the responsibility of the schools to seek learning conditions which will enable each individual to reach the highest level of learning possible. Benjamin Bloom.

**Lesson no 34**

# GAGNE'S THEORY

## Topic 199: Robert Gagne

### Background

A definition of learning

Learning is the mechanism by which an individual becomes a competently functioning member of society.

Instruction is the arrangement of conditions of learning to promote attainment of some goal.

Robert Gagne an experimental psychologist worked on learning and instruction for several decades.

- He earlier worked in a behaviorist tradition, but was later inspired by the information processing view of learning and memory.
- Gagne theory includes five categories of learning outcomes and the nine events of instruction.
- Together these two themes provide a framework for learning outcomes.

## Topic 200: Introduction

Robert Gagne's theory is based upon an information processing model, defining several factors that influence learning and are called the Conditions of Learning. (internal/external)

Gagne's conditions of learning shift the study of learning from lab to the real-world settings.

According to Gagne:

The internal conditions consist of learner's existing capabilities.

The external conditions include the stimuli that exist outside the learner, such as the environment, the teacher and the learning situation.

Gagne's theory is broken into three areas:

1. A taxonomy
2. Internal and external factors necessary to achieve learning.
3. Nine events of instruction.

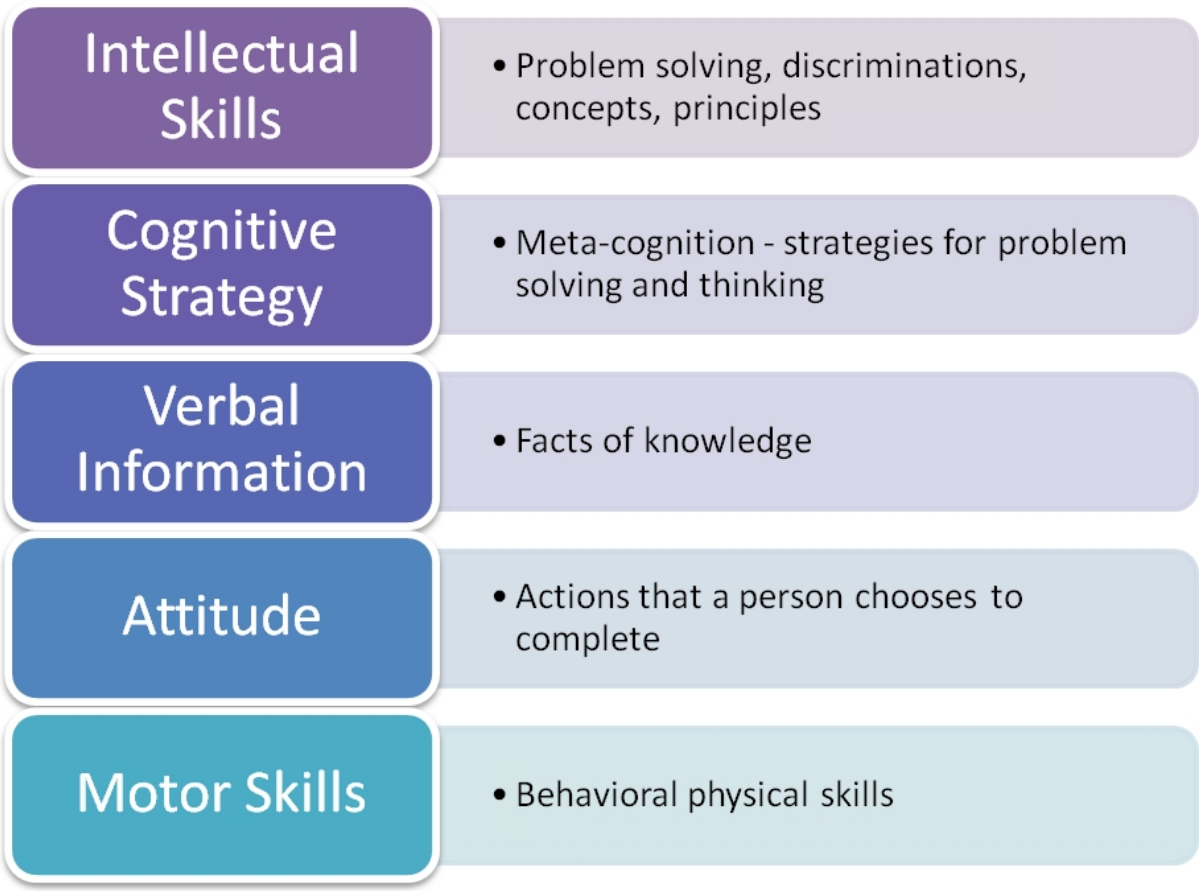
Gagne's Taxonomy of learning outcomes is somewhat similar to Bloom's taxonomies of cognitive, affective and psychomotor outcomes.

Both Bloom and Gagne Believed that it was important to break down humans' learned capabilities into categories or domains.

**Topic 201: Gagne's theory**

Gagne's taxonomy of learning (1972) is classified as an instructional theory as it has great significance for the design of instructional materials.

- It tells a part the types of outcomes that learning produces – i.e. the categories of learned capabilities – observed as human performances – that have common characteristics.
- The taxonomy comprises five major categories of learning:
  1. Verbal information
  2. Intellectual skill
  3. Cognitive strategy
  4. Attitude
  5. Motor skill
- Each of the categories leads to a different class of human performance.
  (Gagne, Briggs and Wager,1992)




## Topic 202: Verbal and Intellectual

### Verbal Information

Description

- Being able to state ideas, "knowing that" or having declarative knowledge.

Conditions

Retrieving stored information: the internal conditions to support this learning include:

- Pre-existing organized knowledge.
- Strategies for processing the new information.

Conditions

Mental operations that permit individuals to respond to conceptualizations of the environment: the internal conditions include:

- Applying the new skills to a variety of different situations and contexts
- Recalling prerequisite skills.

## Topic 203: Cognitive and Attitude

### Cognitive Strategy

### Description

- Having a certain techniques of thinking, ways of analysing problems and having approaches to solving problems.

### Conditions

An internal process by which the learners plans, controls and monitors his/her own ways of thinking and learning, including

- Task specific
- General
- Executive

### Attitude

### Description

- Mental state that influence the choices of personal actions.

### Conditions

- An internal state, i.e. predisposition that affects an individual choice of action.

## Topic 204: Motor Skills

### Description

Executing movements in a number of organized motor acts such as playing sports or dividing a car.

**Conditions**

Capability to perform a sequence of physical movements.

Conditions

It involves three stages:

1. Learning the sequence of the movement.
2. Practicing the movement.
3. Refining the movement based on the feedback received from the environment.


Figure 2. Nine Events of Instruction by Robert Gagne

**Lesson no 35**

# NINE INSTRUCTIONAL EVENTS

## Topic 205: Nine Instructional Events 1

- According to Gagne, learning is a step-by-step process.
- Each step must be accomplished before the next in order for learning to take place.
- The events of instruction are the eternal events that help learning occur and are designed to achieve each of the five different learning outcomes.
- Gagne puts numbers to the instructional events from one to nine, putting them in sequential order.
- General considerations to be taken into account when designing instruction. Although some steps might need to be rearranged (or might be unnecessary) for certain types of lessons, the general set of considerations provide a good checklist of key design steps.

## Topic 206: Nine Instructional Events 2

- Telling learners the learning objectives
- The teacher tells the learners what they will be able to do because of the instruction.
- The teacher communicates the desired outcome to the group.
- Sharing the goals of instruction with the learners allows the learners to organize their thoughts on what they will learn, what they will be able to perform and how they will be able to use their new skills.

## Topic 207: Nine Instructional Events 3

- Stimulating recall of prior learning
- The teacher asks for recall of existing relevant knowledge.
- This allows the learners to use two important learning processes.
- Retrieval practice: enhances learning by retrieval – retrieve and reconstruct knowledge.
- Scaffolding: is building upon the learners' previous knowledge and skill – slowly build previous, add more details, leave learners to perform on their own.

- Feedback is given to learners on individualized tasks , to correct isolated problems rather than having little idea of where the root of the learning challenge lies.

## Topic 208: Nine instructional Events 4

### Providing learning guidance

- The teacher helps the students in understanding (semantic encoding) by providing organization and relevance.
- Providing coaching on how to learn the skills.
- The rate of learning increases because learners are less likely to lose time and become frustrated by practicing the wrong way or having poorly understood concepts.

### Eliciting Performance

- The teacher asks the learners to respond, demonstrating learning.
- Practice by letting the learner do something with the newly acquired behavior, skills or knowledge.

## Topic 209: Nine Instructional Events 5

### Providing feedback

- The teacher gives informative feedback on the learner's performance.
- This can be a test, quiz, or verbal comments. Be specific, not, "you are doing a job". Tell them why they are doing a good job or provide a specific guidance.

### Assessing performance

- The teacher requires more learner performance and gives feedback to reinforce learning.
- Test to determine if the lesson has been learned and provide general progress information.
- Enhancing retention and transfer to other context
- The teacher provides varied practice to generalize the capability.
- Inform the learner about similar problem situations, provide additional practice, review the lesson.

**Topic 210: Put into Practice**

The method of putting Gagne's theory in practice as follow:

1. The instructor determines the objectives of the instruction.
2. Objectives are categorized into one of the five domains of learning outcomes.
3. Each of the objectives is stated in performance terms using one of the standard verbs associated with the particular learning outcome.
4. The instructor then uses the conditions necessary for learning.
5. The events of instruction necessary to promote the internal process of learning are chosen and put into the lesson plan.

The events in principles become the framework for the lesson plan or steps for instruction.

**Lesson no 36**

# DIFFERENTIATED LEARNING

## Topic 211: What is Differentiation?

- A teacher's response to learner's needs.
- The recognition of students varying background knowledge and preferences.
- Instruction that accommodates students' differences.
- Whenever a teacher reaches out to an individual or small group to vary his or her teaching in order to create the best learning experience possible, that teacher is differentiating instruction.

**Why Differentiate?**

- All kids are different.
- One size does not fit all.
- Differentiation provides all students with access to all curriculum

## Topic 212: Differentiated Elements 1

Teachers can differentiate four classroom elements based on student readiness, interest or learning profile:

- Content
- Process
- Product
- Learning environment

Content

What is being taught; what the students needs to learn or how the students will get access to the information.

You can differentiate the actual content being presented to students.

**Examples**

- Using reading materials at varying readability levels.
- Using spelling or vocabulary lists at readiness levels of students.
- Presenting ides through both auditory and visual means;

## Topic 213: Differentiating Elements 2

**Process**

Activities in which the student engages in order to make sense of or master the content.

How the student learns what is being taught.

**Example**

- Varying the length of time a student may take to complete a task in order to provide additional support for a struggling learner or to encourage an advanced learner to pursue a topic in greater depth.

**Product**

- Culminating projects that ask the students to rehearse, apply and extend what he or she has learned in a unit.
- How the student shows what he or she has learned. How is learning assessed.

**Examples**

- Giving students options of how to express required learning (e.g. create a play, write a letter or develop a picture with labels)
- Using rubrics that match and extend students' varied skills levels.

## Topic 214: Differentiating Elements 3

**Learning Environment**

The way the classroom works and feels.

**Example**

- There are places in the classroom to work quietly and without distraction, as well as places that invite student collaboration.
- Making sure there are places in the room to work quietly and without distraction, as well as places that invite student collaboration;
- Providing materials that reflect a variety of cultures and home settings.

## Topic 215: Differentiating States

**Readiness**

Skill level and background knowledge of the student.

**Example**

- Some students may be ready to read text at a fifth grade level, while others are ready to read text at a third-grade level.
- Knowing a student's favorite cartoon character could allow you to tie that into an example and might motivate the student.

**Learning Profile**

- This includes learning styles (visual, auditory, tactile or kinesthetic) as well as preferences for environmental factors (such as level of distraction or exposure to light or noise) or grouping factors (small group, large group or individual)

**Topic 216: Arguments for and against**

The idea behind Differentiated Instruction is beautiful: instead of teachers teaching to the mean of the whole class, teachers "meet children where they are" and teach all children based on their individual pre-existing skills/learning styles.

Helps both:

- Low achievers who need more structure and basics and
- High achievers who need that push and enrichment to reach deeper conceptual knowledge.

A 2008 nationwide survey of 900 teachers by the Fordham Institute (Ohio, USA) in the US, over 80% said Differentiate Inst. Was "very difficult" to implement.

46% teachers believe that it benefits low-achievers more.

A consensus among experts on practical teaching that Differentiated Instruction is highly effective does not exist.

**Lesson no 37**

# ASSESSMENT IN LEARNING

## Topic 217: Importance of assessment

### Assessment Derives Learning

"Assessment is essential not only to guide the development of individual students but also to monitor and continuously improve the quality of programs, inform prospective students and their parents and provide evidence of accountability to those who pay our way".

Assessment is needed for learning.

Assessment and feedback are crucial for helping people learn.

Individuals acquire a skill much more rapidly if they receive feedback about the correctness (or otherwise) of what they have done.

Assessment is needed for quality learning environment

Quality learning environments are:

- **Learner- centered**
- **Knowledge centered**
- **Assessment centered**
- **Community centered**

## Topic 218: Purpose of Assessment

- Assessment is used for various purposes
- Assessment for learning:
- Assessment helps teachers to gain insight into what students understand; enables teacher to plan and guide instruction effectively, and provide helpful feedback to students.
- Assessment as learning:
- Students develop an awareness of how they learn about assessment and use that awareness to adjust and advance their relevant learning.
- Assessment of learning assessment informs students, teachers and parents, as well as the boarder educational community, of achievement at a certain point in time in order to celebrate success, plan interventions and support continued progress.

## Topic 219: Assessment Applied I

- Provides diagnostic feedback
- What is the student's knowledge base?
- What is the student's performance base?
- What are the student's needs?
- What has to be taught?
- Helps educators set standards
- What performance demonstrates understanding?
- What performance demonstrates knowledge?
- What performance demonstrates mastery?

## Topic 220: Assessment Applied II

Evaluates progress

- How is the student doing?
- What teaching methods or approaches are most effective?
- What changes or modifications to a lesson are needed to help the student?

Relates to a students Progress

- What has the student learned?
- Can the student talk about the new knowledge?
- Can the student demonstrate and use the new skills in other projects?

## Topic 221: Assessment Applied III

**Motivates performance**

**For student self-evaluation:**

Now that I'm in charge of my learning, how am I doing?

Now that I know how I'm doing, how can I do better?

What else would I like to learn?

**Motivates performance**

**For teacher self- evaluation:**

What is working for the students?

What can I do to help the students more?

In what direction should we go next?

**Topic 222:Assessment Outlook**

- Assessment is embedded in the learning process.
- It is firmly interconnected with curriculum and instruction.
- As teachers and students work towards the achievement of curriculum.
- Outcomes, assessment plays a constant role in informing instruction, guiding the student's next steps, and checking progress and achievement.

Research and experience show that student learning is best Supported

**When:**

Instruction and assessment are based on clear learning goals

Research and experience show that student learning is best supported

**When:**

Instruction and assessment are differentiated according to student learning

**Needs**

Assessment information is used to make decisions that support further learning

**Lesson no 38**

# ASSESSMENT FOR LEARNING I

## Topic 223: AfL is a process

For teachers:

- AfL helps teachers to gather information to plan and modify teaching and learning programmes for individual students, groups of students and the class as a whole

For teachers:

- AfL helps teachers to identify students' learning needs in a clear and constructive way so they can be addressed

For students:

- AfL provides students with information and guidance so they can plan and manage the next steps in their learning.
- AfL uses information to start from what has been learned to what needs to be learned next.

**Topic 224: Historical Perspective**

- Historically, teachers used to design a unit of study that would include objectives, teaching strategies, and resources.
- The student's score on this test was taken as the indicator of his or her understanding of the topic.
- In 1998, Black & William made a study which highlighted that students who were given formative teaching achieved much better results than matched control groups receiving normal teaching.
- Their groundbreaking work developed into several significant research projects on
- Assessment for Learning all over the academic world in UK, USA and Latin America.

**Topic 225: Learning to Learn**

- Good assessment should focus less on "do they have the right or wrong answer?" and more on making students' thinking visible to both teacher and student
- It should help develop understanding of the strategies and patterns students have constructed in order to make sense of the world.
- The assessment for learning process can explain the approaches used by students and help them to become more aware of not only what they are learning, but how they are learning it.
- This empowers students to take control of their learning.
- Learners like this have the ability to seek out and gain new skills, new knowledge and new understanding, according to their own needs and learning goals.

**Topic 226: Building Students Assessment Capability**

- Students who actively participate in assessing their learning by interpreting their performance, are found to be better placed to identify their own strengths and needs, and discover how to make 'Where to next..' decisions?
- Students should be educated In ways that build their assessment capabilities, so they can take increasing control of their own learning and, through this process, become more effective and independent learners.

- Assessment-capable students can also provide better information to teachers.
- Better student feedback gives teachers a clearer picture of students' learning needs and enables more personalized development of next teaching and learning steps.

**Topic 227: Engagement and Motivation**

- One of the most important purposes of assessment for learning is the role it plays in student motivation.
- Assessment that encourages learning promotes motivation by highlighting progress and achievement rather than failure.
- Developing students assessment capabilities engages and motivates them, and helps them to become more independent learners.

**Topic 228: Planning and Communication**

- Assessment for learning should be built into teachers' planning as a part of everyday classroom practice. Learning goals, teaching strategies and assessment criteria should be carefully matched.
- Students should know in advance what they will learn, as well as how and why they are to be assessed.
- A teacher's planning should provide opportunities for both student and teacher to obtain information about progress towards learning goals, and use it to direct the learning process.

**Lesson no 39**

# ASSESSMENT FOR LEARNING II

## Topic 229: Cumulative Measurement of Progress

- Assessment should be valid. fair and suited to the purpose. It should measure progress not just achievement.
- To make a valid and fair measure of progress overtime, teachers need to analyze information from a range of sources. It's important that teachers gather information both formally and informally
- Any assessment can only be a snapshot of achievement on a particular day.
- Performance will vary from day to day depending on the nature of the assessment task the conditions in which the assessment is undertaken

## Topic 230: Support for Teaching and Learning Goals I

- Teachers need to know how a given assessment should enhance learning, and how to check if it has.
- Assessment should emphasize quality student-teacher learning interactions and be fit for
- purpose.

**Identifying the learning need**

- Assessment information helps teachers and students identify where a student is in terms of their learning, where they want to be, and what next teaching and learning steps can help them to achieve their goals.

- This means striking a delicate balance...if the next instructional steps are too hard for the
- Student, frustration will be the most likely result, lf they are too easy, boredom and
- Disengagement will occur.

## Topic 231: Support for Teaching and Learning goals II

**Feedback**

- Feedback based on assessment is one of the most powerful ingredients in teaching and learning, and maximizing the quality, appropriateness and use of feedback should be a core aim of all assessment practice.
- There should be as much or as little feedback as is needed, using a number of approaches if necessary.
- Knowledge of the learner is essential for knowing what is appropriate and ensuring feedback empowers the learner.
- Feedback can drive a loop of continuous change and improvement for both the teacher and student, as both learn from each other.

## Topic 232: Support for Teaching and Learning Goals III

**Next teaching and learning steps**

- To be effective in describing next teaching and learning steps, assessment for learning should be linked to some form of learning progression.
- A learning progression should clearly express what steps will indicate progress towards an ultimate learning goal.
- Assessment for learning helps to locate the student's position along the learning progression.
- Progression does not necessarily always happen in a linear fashion. Students will often move far ahead in one area while retaining significant learning needs in another.
- Part of the art of teaching is supporting students to build on strengths in order to meet needs, and providing students challenging yet achievable steps towards their learning goals.

## Topic 233: Social Aspects of AfL

- To be effective, assessment for learning needs to take place within a positive learning environment.
- Students should be encouraged to take risks and make errors, and understand that
- Wrong answers can assist learning just as effectively as right answers.

- Encouraging a culture of listening critically to one another, responding positively and constructively. Appreciating the different strengths, experiences and skill sets among peers will help create such an environment.
- Effective AfL recognizes importance of the knowledge, skills and understanding that both teachers and students bring to learning interactions, and it acknowledges the way that new knowledge and understandings can grow out of shared learning experiences

**Topic 234: Cultural Aspects of AfL**

- In the classroom, non-judgmental exploration of teachers' and students' own cultural values, assumptions and understandings about learning and assessment may help them to use the differences that surface to develop their own strengths, and identify areas for improvement.
- Effective assessment practice needs to recognize different values, assumptions and understandings and the impact they have on students response to different assessment approaches.
- Effective assessment practice should plan for collaborative and collective assessment in both formal and informal contexts, in order to reflect the educational values of different cultures, backgrounds and experiences.

**Lesson no 40**

# THEORY OF MULTIPLE INTELLEGENCE I

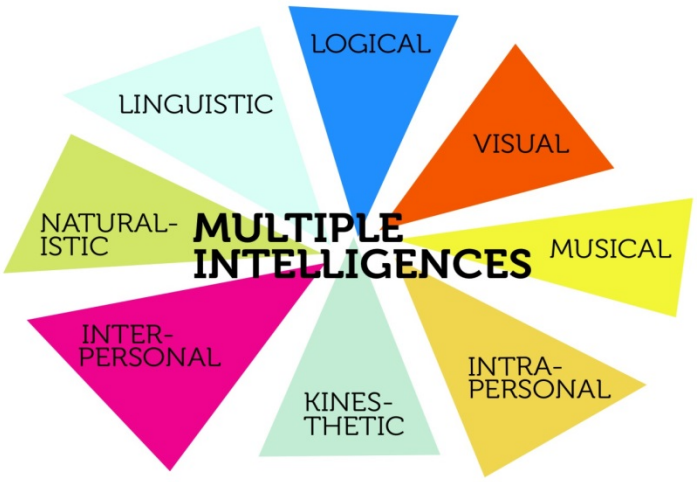
## Topic 235: Theory of Multiple Intelligences

"I am 100% convinced that if I were to come back to Earth in 50 years, people would laugh at the idea of uniform education." Howard Gardner

- Developed by Howard Gardner in the early 1980's at Harvard.
- Attempt at a better understanding of human intelligence.
- Developed 8 (eight) intelligences.

We all have a unique blend of intelligences

- **Multiple intelligences**
- **Naturalist**
- **Musical**
- **Bodily Kinesthetic**
- **Intrapersonal**
- **Interpersonal**
- **Linguistic**
- **Logical Mathematical**



## Topic 236: Verbal/ Linguistic Intelligence

**Linguistic Intelligence (Word Smart) is the capacity to use language**

"Ability to manipulate the structure and practical dimensions of language. Journalists, poets, playwrights, public speakers".

- Can understand words and manipulate the structure of language
- Has highly developed communication skills including writing, speaking, and story-telling
- Knows and correctly uses rules of grammar
- Enjoys reading, writing, and speaking
- Has a large vocabulary

He learns best by:

- Saying, hearing, and seeing words
- Writing
- Talking
- Reading

Activities These People Would Enjoy

- Book reporting
- Telling jokes
- Writing words
- Reading
- Journal writing
- Speaking

## Topic 237: Logical-Mathematics Intelligence

It is the Capacity to use numbers, logical patterns.

Such a person think by reasoning, loves questioning, calculating experimenting and figuring out logical puzzles.

**Kinds of Processes**

- Used in logical mathematical intelligence sequence:
- Categorization
- Classification
- Inference
- Generalization
- Calculation
- Hypothesis testing
- Mathematicians, scientists, accountants, statisticians….

## Topic 238: Spatial Intelligence

- The brain's ability to perceive and interpret visual stimuli.
- Its how our minds process what we see.
- Spatial intelligence is very important in the arts and in every day life.

**Importance of Spatial Intelligence**

We visually perceive and interpret the world around us.

In the arts, the ability to transfer a vision ton a painting, sculpture or film is a key quality.

**Teaching activities**

Visual presentations, art activities, imagination games, visualization, metaphor

Instructional Strategies

See it, draw it, visualize it, color it, mind-map it.

## Topic 239: Bodily-Kinesthetic Intelligence

- It is expertise in using one's body to express ideas and feelings.
- It is the ability to use something by hands.

**Teaching activities**

Hands on learning, drama, dance, sports that teach tactile activities, relaxation exercises.

**Instructional Strategies**

- Build it, act it out, touch it, get a "gut feeling" of it, dance it.
- Activities these people would enjoy
- Using whole body

**Examples**: acting, sports dancing and using body language.

Using hands

Examples: sculpting clay and hands-on learning

**Lesson no 41**

# THEORY OF MULTIPLE INTELLIGENCE II

## Topic 240: Musical Intelligence

- Being able to distinguish the sounds around you.
- Having the ability to make your own melodies.
- Singing a song or making music.
- Identifying rhythm.
- Teaching activities
- Rhythmic learning, rapping, using songs that teach.
- Instructional Strategies
- Sing it, rap it, listen to it, activities Sing Ballads Create Chants , create Concept Songs

## Topic 241: Intrapersonal Intelligence

- It is a self-knowledge and the ability to act adaptively on the basis of that knowledge.
- This intelligence includes having an accurate picture of one's strengths and weaknesses.
- It is awareness of inner moods, intentions, motivations, desires and temperaments.
- The capacity for self-discipline, self-understanding and self-esteem.
- Its how well you know yourself.

**Teaching activities**

Individualized instruction, independent study, options in course of study, self esteem building.

**Instructional Strategies**

Connect it to your personal life, make choices with regard to it, reflect on it.

## Topic 242: Interpersonal Intelligence

- Interpersonal Intelligence (people smart) is understanding others.
- Ability is at a premium in teachers, clinicians, salespersons and politicians.
- Dealing with other people requires skill in the interpersonal sphere.

- Interpersonally intelligent people enjoy:
- Giving feedback
- Understanding other's feelings
- Person-to-person communication
- Cooperative learning strategies:
- Group projects
- Conducting an interview

**Topic 243: Naturalist**

- Ability to function well in the natural environment.
- The recognition and categorization of natural objects.
- Sensitive to patterns in and connecting to nature.
- Especially like animals and natural phenomena.
- People with naturalistic intelligence learn better by:
- Studying outside
- Learning in the presence of plants and pets
- Relating environmental issues to topic
- Smelling, seeing, touching, tasting,
- Observing natural phenomenon
- Suggestions for Teachers
- Be aware to changes in even minute details of the classroom environment, bring the outdoors in.

**Topic 244: Key Points**

Four key points that are important to remember when using this theory in practice;

- Each person possesses all in intelligence.
- There are many ways to be intelligence within each category.
- Intelligence usually work together in complex ways.
- Most people can develop each intelligence to an adequate level of competency.

## Topic 245: Arguments For and Against

**Pros**

- All students will be seen as successful,
- All talents of students will be appreciated.
- A variety of instructional practices are used.
- Lessons are planned with more thought.
- Meets individual needs better.

**Cons**

- More time is needed for lessons.
- Assessing students learning could be cumbersome.
- Uniting a staff would be difficult.
- More supplies would be needed.

## Topic 246: Implications

- MI theory challenges the widely held belief that intelligence is a unitary trait that can be adequately measured by an IQ test.
- MI theory claims that there are many ways to be smart and that those abilities are expressed in our performances, products and ideas.
- MI theory does not direct teachers to practices, but serves as a catalyst.
- MI theory offers both a framework and a language to use to develop practices that best fit one's context.

**Lesson no 42**

# QUESTIONING TECHNIQUES

## Topic 247: Overview

"Good learning starts with questions, not answers"

Why ask questions?

- Check the students understanding of key points.
- Check for mastery of basic concepts.
- Stimulate interaction among students, as well as between student and instructor.

What do we mean by questioning techniques?

- Methods used for constructing and presenting questions in order to promote effective discussion and learning or to elicit information.


## Topic 248: Types of Question Techniques 1

### Closed Questions

A closed question usually receives a single word or short factual answer. For example:

- Are you thirsty?

- Answer Yes/No
- Where do you live?
- Answer generally the name of your town/your address.

**Usage**

- To test understanding, so if two plus three make five, three plus two will also make five?"
- To conclude a discussion or make a decision: now we know the facts, are we all agreed this is the right course of action?
- Frame setting: "are you happy with the exam setting?
- A misplaced closed question, on the other hand, can block a discussion and lead to awkward silences, so are best avoided when a discussion is on.

## Topic 249: Types of Question Techniques 2

**Open questions**

- Open questions prompt longer answers.
- They usually begin with what, why, how.
- An open question asks the respondent for his or her knowledge, opinion or feelings.
- Tell me and describe can also be used as an open question.

**Examples:**

- Tell me what happened next.
- Describe the circumstances in more detail.

**Usage**

- Developing an open conversation: what did you learn?
- Finding out more details: what else can we do for success?
- Finding out the other person's opinion or issues: what do you think about those changes?

## Topic 250: Questioning Techniques 1

- Encourage students to ask questions at any time.
- Give adequate consideration to all questions – never evade a question.

- Scatter questions over the entire class.
- Use “APPLE”

**APPLE**

Ask the question: questions should be prepared in your lesson plan in advance.

Pause: let the learners think about what you are asking . give the learners 3-5 seconds in order to respond.

**Topic 251: Questioning Techniques 2**

APPLE
Pick: pick on a learner by name to answer the question. Do not always pick on the first learner that raised his hand. You may also pick on someone that has not raised his hand in order to force participation.

Listen: listen to the answer, make eye contact with the learner, provide effect words when the answer is provided. Mix your effect words, nothing sounds more untrue than an instructor who always says ”very good”.

**Topic 252: Questioning for Learning**

Questions that seek clarification include:

Can you explain that?

What do you mean by…?

Can you give me an example of….?

How does that help us?

Does anyone has a question to ask?

**Hierarchy (Questioning to Learning)**

- Questioning
- Thinking

- Understanding
- Learning
- Performance
- Achievement

**Lesson no 43**

# TEACHER TALK

## Topic 253

## Importance of Teacher Talk in Learning


**What is teacher talk?**

"Everything that a teacher says in a classroom".

- The language used by the teacher for instruction in the classroom is known as teacher talk.
- Longman dictionary of language teaching and applied linguistics defines it as "that variety of language sometimes used by teachers when they are in the process of teaching".
- Teacher talk is used in class when teachers are conducting instructions, cultivating their intellectual ability and managing classroom activities.
- Teacher talk is a kind of communication-based or instruction-based talk.

## Topic 254

## Categories of Teacher Talk

- Curriculum-related any talk about the actual content and skills to be taught.
- Organizational- talk to organize activities and participation patterns, to manage transitions, to frame activities, to manage time, space, provide general instructions, etc.

- Regulatory: disciplining, behavior management, class and student control by teacher, generally with a negative connotation.
- Test-strategy: explicit reference to testing, exams or test requirements; it might include advice on how to take test.
- Informal- digressive class talk with teacher, time out and chats with students; it does not include students chatting in the classroom.
- Uncodable talk- talk that cannot be categorized, or its context of utterance is not clear.

## Topic 255: Descriptors for Teacher Talk

**Areas relating to promoting learning**

**Goal setting:** Teacher talk which refers to learning goals, objectives, and outcomes for the lesson.

**Prior experience:** Teacher talk which encourages students to use or build on prior experiences.

**Encourages independent learning:** Talk that encourages students to learn independently.

**Encourages/discourages collaboration:** Teacher talk that encourages/discourages students to collaborate with each other in their learning.

## TOPIC 256: Benefits of Teacher Talk 1

- Educators and researchers in general emphasize that classroom talk has the power to improve both students' learning and ability to reason and teachers' ability to teach.
- It has many more advantages/benefits.

1. Talk can reveal understanding and misunderstanding.
   This helps teachers adjust their teaching also called formative assessment. Students may themselves realize what they do not understand and what they do understand.
2. Talk supports learning by boosting memory.
   Talk is a rich source of information and plays a part in almost every memory we form. By hearing and talking about concepts, procedures and uses, our memories have more to work with.

## Topic 257: Benefits of Teacher Talk 2

**3. Talk supports language development.**

When talk is used intensively in classes, students may get a richer sense of meaning and uses of words and phrases. Their control of complex grammar also improves in speaking, reading and listening.

**4. Talk supports deeper reasoning.**

Learning to reason well takes time, practice and working with other people: explaining your and talking about other people reasoning. Teachers can give students that practice by using talk in strategic ways.

**5. Talk supports development of social skills.**

Teachers talk gives students a chance to learn about respect and kindness. It improves students' social skills and ability to be patient and cooperative with others.

## Topic 258: Affect in Teacher Talk

"Your choice of words and your language selections are critical to the self-esteem, the academic success and the healthy mental and emotional development of your students".

- A definite link exists between the words that a teacher speaks and the attitudes and outcomes the students create in their lives.

**Lessson no 44**

# COMPARING THEORIES I

## Topic 259: Overview

- For thousands of years, philosophers, psychologists and educators have sought to understand the nature of learning, how it occurs and how one person can influence the learning of another person through teaching and similar endeavors.
- Various theories of learning have been suggested.
- A theory, most simply, is a combination of different factors or variables knitted together in an effort to explain whatever the theory is about.
- None of the learning theories completely defines the learning process in its entirety.
- Each depends on the context in which learning is occurring and the goal of learning – a theory takes predominance accordingly.

## Topic 260: Background Information

- Learning theories allows teachers to better understand the process of learning.
- There are many learning theories, however, we will focus on the Behaviorism, Cognitivism and Constructivism models.

Behaviourism

- The theory derives from Pavlov's classical conditioning and Skinner's operant conditioning.
- Reinforcement help keep interest.
- Stimuli are effective in controlling behaviour.
- The behavior can be measured to record learning success.

**Cognitivism**

- Learning is attained through rehearsal and consistent use of the information.
- Retention strategies such as breaking down information and putting the information to long term storage are great techniques.

**Constructivism**

- Learning viewed as a process in which the learner construct knowledge based on their past experiences.
- Learners may collaborate with others to organize their ideas and learn from each other to construct their own knowledge.

## Topic 261: Key Principles

**Representation of the learning process:**

**Behaviorism**

- Stimulus- response
- Reinforced behavior
- Antecedent behavior consequence
- Sequenced knowledge and skills presented in logical limited steps

**Cognitivism**

- Cognitivist learning perspective
- Information processing
- Schema
- Mental models

**Constructivism**

- Inquiry-based
- Discovery learning

## Topic 262: Key Differences

**Behaviorism**

- Learning happens when a correct response is demonstrated following the presentation of a specific environmental stimulus.

**Cognitivism**

- Learning is viewed as an active process that occurs within the learner and which can be influenced by the learner.

**Constructivism**

- Learners build personal interpretation of the world based on experiences and interaction.

## Topic 263: Principle Theorists

**Behaviorism**

Skinner, Burrhus Fredrick (1904-1990)

- Psychologist, studied at Harvard, proponent of the operant conditioning, and the inventor of the Skinner box for facilitating experimental observations.

**Cognitivism**

Gagne, Robert (1916-present)

- An experimental psychologist – earlier worked in behaviorist tradition, then was influenced by the information processing view of learning and memory.

**Constructivism**

Lave, Jean

- A social anthropologist believes that learning is a social – not a cognitive- process; pioneered the theory of situated learning and communities of practice.

## Topic 264: Embedded theories

**Behaviorism**

Skinner's Operant Conditioning

- Modification of behavior by using positive and negative reinforcement- an individual makes an association between a particular behavior and a consequence.

**Cognitivism**

Schema Theory

- Memory takes the form of schema which provide a mental framework for understanding and remembering information.

**Constructivism**

Situated cognition

- Knowing is inseparable from doing and all knowledge is p-laced inactivity connected with social, cultural and physical context.

**Lesson no 45**

# COMPARING THEORIES II

## Topic 265: Goals of Instruction

### Behaviorism

- Communicate or transfer behaviors representing knowledge and skills to the learner (does not consider mental processing)

### Cognitivism

- Teachers/designers are responsible for assisting learners in organizing information in an optimal way so that it can be readily assimilated.

### Constructivism

- Instruction is a process of supporting knowledge construction rather than communicating knowledge.

## Topic 266: Instructional Models

### Behaviorism

Information Transferring

- This model represents information transferring to some extent as a computer model.
- It can be related to computer input-process-output; involves subroutines or procedures.

### Cognitivism

Keller's ARCS Model of Motivation

- Proposed four conditions for a learner to be motivated to learn- attention, relevance, confidence and satisfaction- when integrated, motivate one to learn.

### Constructivism

Problem- Based Learning (PBL)

- Instruction begins with a problem to be solved rather than content to be students are introduced to a real world problem and are encouraged to find a solution themselves.

## Topic 267: Implications for Instructional Design

**Behaviorism**

Behavioral objectives

- Learning means learners show correct response to a certain stimulus.

**Cognitivism**

Cognitive objectives

- Cognitive psychology has influenced the types of goals and objectives that are developed as a result of task analysis.
- Bloom's taxonomy addresses the cognitive domain.

**Constructivism**

Problem-oriented activities

- Focus is on students solving problems, methods integrate problem posing, problem solving and peer persuasion.

## Topic 268: Knowledge Perspective

**Behaviorism**

- Learning can be detected by observing an organism over a period of time.
- Emphasis is on observable and measureable behaviors.

**Cognitivism**

- Knowledge acquisition is described as a mental activity that entails internal coding and structuring by the learner.
- Learner is viewed as an active participant in the learning process.

**Constructivism**

- Create novel and situation-specific understandings by "assembling" knowledge from diverse sources appropriate to the problem at hand (flexible use of knowledge)

## Topic 269: Role of Memory

**Behaviourism**

- Memory is the hardwiring of repeated experiences, where reward and punishment are most influential.

**Cognitivism**

- Encoding
- Storage
- Retrieval

**Constructivism**

- Prior knowledge remixed to current context.

## Topic 270: Technology Support

**Behaviourism**

- Educational software can be used to measure the students' assessment.

**Cognitivism**

- Flashcards and memory games can help retain information taught in a lesson.

**Constructivism**

- Group power-point projects allow students to work together and combine their knowledge to learn.