Cognitive learning Theory

- In the 1960's, Bruner developed a theory of cognitive growth. His approach considered both environmental and experiential factors.
- Bruner felt that people interpret the world in terms of similarities and differences, which are detected among objects and events. The learner utilizes a coding system to organize information.
- His theory states that, "To perceive is to categorize, to conceptualize is to categorize, to learn is to form categories, to make decisions is to categorize":
- The categories have a hierarchy and each successively higher level within those categories becomes more and more specific.

Bruner believed that "Learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge. The learner selects and transforms information, constructs hypotheses, and makes decisions, relying on a cognitive structure to do so. Cognitive structure (i.e., schema, mental models) provides meaning and organization to experience and allows the individual to 'go beyond the information given'".

A Bruner theory of instruction would address four major aspects

1. Predisposition towards learning
2. The ways in which a body of knowledge can be structured so that it can be most readily grasped by the learner
3. The most effective sequences in which to present material
4. The nature and pacing of rewards and punishments

The role of the Instructor

Bruner felt that in order for learning to occur:

- The Instructor should encourage students to discover concepts by themselves.
- The Instructor and the student should engage in active dialogue.
- The task of the Instructor is to translate information for the student in a way that is consistent with their current state of understanding.
- Curriculum should be organized in a spiral manner so that new learning is built onto what they already know.

The Construction of Knowledge

- Bruner's theory of how children construct knowledge involves three concepts
- Very young children rely on enactive modes to learn. Children learn to sit up, roll over, and walk through the action of actually doing those things.
- During the early school years, iconic representation becomes dominant.
- Children learn to understand what pictures represent; they learn math skills, etc.
During adolescence the symbolic mode of learning becomes the most dominant; students are able to work with abstract concepts. Bruner felt that mastering these different stages and becoming more skilled at each is the key to developmental growth.

Implications for classroom instruction

- Children should be given the tools they need to develop. Educators need to make sure they provide each student with the opportunity to learn based on their individual stage of development.
- Study guides and texts should match the developmental stage of the learner.
- Learning should take place in the students' world. In other words, start with what they know and build on it.
- Lesson plans should involve all three types of learning (Enactive, Iconic, and Symbolic). For example, if a teacher was teaching a lesson plan about space, the student could construct a model of a planet (Enactive); then they could watch a movie about space exploration (Iconic); or they could read about space in a text and then discuss what they learned (Symbolic).

John Dewey and Constructivism - Major Ideas

- Emphasized practical ideas in his philosophical and educational theories.
- Emphasized how abstract concepts could work in everyday life.
- Emphasized hands-on learning.
- Opposed authoritarian methods in teaching.

Theory of Education

- Functionalism - encouraged mental testing and stressed studies of adaptive behavior.
- Combines principles of traditional and progressive education.
- Two essential components:
  - The experience of the learner.
  - Making critical inquiry.

Principles

- Education must engage with and enlarge experience.
- Explore thinking, reflection, and the role of educators.
- Criticized educational methods that simply amuse and entertain students.
- Advocate education that would fulfill and enrich current lives of students and prepare them for the future.

Teaching/Classroom Applications

- Teachers should be involved in reflective inquiry around their own teaching and learning.
- Thinking and practices of a teacher should recognize how minds of a teacher and student interact.
- Teachers should know what they wish to accomplish through their teaching.
- Teachers should know what content knowledge and related skills students will need to accomplish these outcomes.

Example

- Developing learning responsibility:
  - Involve learners in reflecting upon their learning.
  - Use classroom assessment techniques to gather information to guide adjustments teachers and learners need to make to improve learning.
Let learners work individually and in groups
At the end of experience, learners reflect together upon what has occurred for them over duration of work

Abraham Maslow
- Articulated the concepts of:
  - Self-actualization
  - Needs hierarchy
  - Peak experience
- These are some of the founding principles of the humanistic model
- He wrote Motivation and Personality (1954), Toward a Psychology of Being (1968), among others.

Maslow's beliefs about his "Hierarchy of Needs"
- Certain basic needs have to be satisfied before we can ever move on to the highest need ... self actualization.
- Self-actualization is defined as the motivation to develop one's full potential as a human being
- Maslow's hierarchy (1954) charts the human potential of creative, talented, and healthy people
- The bottom three, deficiency needs, are ones children try to make up for if they are not met
- The bottom needs can only be met by external sources- by people and events in one's environment. Once met then a child (or person) can move up
- The top rung, growth needs, includes Maslow's idea of truth, goodness, beauty, wholeness, aliveness, uniqueness, perfection, justice, richness, and playfulness
- The final need is never really satisfied ... it's motivation is intrinsic (Austin, 2000)
- Teachers can help students move toward self-actualization by assisting them in meeting their deficiency needs
- Some think students will not be interested in learning until deficiency needs are met