Bruner's Theory of Instruction

SEM:4, CC – 9:Unit 2/Sub-Unit:4

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ABOUT JEROME S. BRUNER (1915-2016):

***An American Psychologist;**

***Student of G.W. Allport;**

*** Significant Contributions to Human Cognitive Psychology and Cognitive Learning Theory in Educational Psychology;**

*** Founding Father of Constructivist Theory & Main Founders of Cognitive School of Psychology;**

***His Great Books: The Process of Education (1960), Toward a Theory of Instruction (1966), The Relevance of Education (1971), The Culture of Education (1966);**

***His Partners:Goodnow, Austin etc.**

Learning Theory of Bruner (L.T.B):

Jerome S. Bruner (1966) is a proponent of cognitive learning and a developmental psychologist who is primarily interested in the development of mental abilities. Bruner selects the most useful features from the various conflicting theories available. He treats the learner as a reactive organism, who actively selects, structures, retains and transforms learning/information to achieve certain goals.

Bruner suggests that people have primary needs, One of them is **'curiosity'**, which keeps an organism active even in the absence of organic states of tension. Accordingly, Bruner thinks of learning as a goal directed activity which satisfies this drive, and answers the curiosity of the learner. Because of our cognitive activity is not always dominated only by the need for such things as food or sex.

L.T.B Continued…

According Bruner, Learning is a Cognitive Process:

Bruner describes the learner as a problem solver, who interacts with his/her environment to test hypotheses and to develop generalisations. The goal of education, should be cognitive development, and the content of learning should foster the development of problem solving skills through the processes of inquiry and discovery. According to his view, the cognitive process encloses three almost simultaneous processes:

a) **Acquisition of New Knowledge / Information;**

b) Transformation of Acquired Knowledge;

c) Checking the Adequacy of the New Nnowledge;

L.T.B Continued…

The Modes of Cognitive Development are described by Bruner in terms of Three (3) Hierarchical Levels / Modes:

First Mode: Enactive;

Second Mode: Iconic;

Third Mode: Symbolic Representation;

Enactive: It is the representation of knowledge through actions. For example, a child who **enactively** knows how to ride a bicycle may not be able to describe the procedure.

About Enactive Mode/Levels:

Sometimes It is called the concrete stage. It involves encoding action based information and storing it in our memory. For example, in the form of movement as a muscle memory, a baby might remember the action of shaking a rattle.

Examples of manipulative used in this stage in maths education are paper, coins, etc. anything tangible.

L.T.B Continued…

Iconic: It is based upon internal imagery. Knowledge is represented by a set of images/graphics/drawings that stand for a concept but do not fully define it. For example, drawing can represent the **'triangle'** diagrammatically, without explaining the concept of **'Triangularity'**.

Symbolic Representation: It is most advance mode. It is the use of words and other symbols to describe a concept or an experience. Symbolic representation is based upon an abstract, arbitrary and more flexible system of thought. At this stage, language becomes more important as a medium of both of the reception and the expression of ideas. For example, at this stage the child can explain the concept of **'Triangularity'** or the concept behind the operation of a bicycle.

About Iconic Mode/Level:

It is also called the pictorial stage (photographic memory). This stage involves images or other visuals to represent the concrete situation. This stage represents by showing images of the objects on paper or to picture them in one's head. Other ways could be through the use of shapes, diagrams, and graphs.

About Symbolic Representation Mode/Level:

It is called the **Abstract Stage**. This last stage takes the images from the second stage and represents them using words and symbols. The use of words and symbols "**allows a student to organize information**" in the mind by relating concepts together. The words and symbols are abstractions, they do not necessarily have a direct connection to the information.

For example, a number is a symbol used to describe how many of something there are, but the number in itself has little meaning without the understanding of it means for there to be that number of something. Other examples would be variables such as **x or y**, or mathematical symbols such as **+, -, /,** etc. Finally, language and words are another way to abstractly represent the idea. In the context of math, this could be the use of words such as addition, infinite, the number three, etc.

Autonomy in Learning, i.e. Bruner's Discovery Learning

Bruner advocates autonomy in learning. He suggests that when the learner is allowed to approach learning as an act of discovery, s/he will increasingly engage him/her-self in learning, with the autonomy of self-reward. In other words, the learner provides for his/her own stimulation and in this way, arouses his/her own curiosity.

*Learners can be taught to generate their own instructional method and strategy for learning. A learner learns to study independently and acquires skills to establish his/her own standard;

*The feedback needed from the teacher is at a minimum and the teacher's role here must be to create an environment in which learners can learn on their own without the help of any pre-packaged information;

Autonomy in Learning, i.e. Bruner's Discovery Learning Continued…

*Learners should always learn through their active involvement with content and his work was thus influential in the open school movement and other humanistic approaches to learning.

*Teach learners how to value learning for its own sake, enabling them to acquire on their own the knowledge they need.

*According to Bruner, learning should be flexible and exploratory and Institutions should arouse learners' curiosity, minimise the risk of failure and make the activities relevant to them.

Types of Discovery Learning:

EXPERIMENTS;

EXPLORATION;

SIMULATION – BASED LEARNING;

PROBLEM – BASED LEARNING;

INQUIRY – BASED LEARNING;

WEB QUESTS;

Bruner's Theory of Instruction (B.T.I):

Bruner defines learning as a process in which a learner achieves instructional objectives with little or no help from the teacher. He emphasises '**the training of students in the use of mind**' with confidence, energy and honesty.

A Theory of Instruction should take into account:

a) The Ways of Structuring Knowledge;

b) The Presentation Sequence;

c) The Motivating Experience;

d) The Nature of Pacing of Rewards and Punishment;

In his theory of instruction, Bruner puts forth his original ideas concerning the most effective way of achieving knowledge and skills.

B.T.I. Continued…

Bruner's Theory of Instruction should cover the following Major Aspects:

1) The emphasis should be placed upon the learners' skills in handling things, and in perceiving and grasping the subject. The learner's approach to learning should be such that she should be able to use the acquired knowledge in solving problems.

2) The subject matter should be presented **Enactively, Iconically** and **Symbolically** so that learners can acquire optimal comprehension and a generalised set of basic ideas or principles.

3) Bruner recognises the role of extrinsic and intrinsic rewards in promoting learning, but he thinks that intrinsic rewards are more important. Intrinsic rewards in the form of the satisfaction gained from solving problems quickly, the interest and involvement in learning, the pleasure received from the intellectual mastery of it.

B.T.I. Continued…

4) Discovery learning increases motivation and strengthens the learner's tendency to carry out his/her learning activities with the autonomy that goes along with self-reward.

5) Discovery learning teaches the learner the techniques of problem solving and results in a better retention of what is learned because the learner acquires the knowledge through his/her own efforts.

6) Intellectual honesty, i.e. willingness to check and correct one’s ideas and notions, or one’s adopted solutions to problems, should be cultivated.

Role of Teacher:

*Classroom Teaching-Learning should organised from specific to general.

*Subject matter is made up of concepts. Concept attributes is an important feature. Example: lake, human beings. Attributes are its depth water, male, female etc.

*Subject must be Taught when the Teacher believes the child has reached the appropriate state of Cognitive Maturity.

* Bruner opposed Piaget's notion of readiness. He argued that schools waste time trying to match the complexity of subject material to a child’s cognitive stage of development.

Best Application Process of B.T.I:

*** Instruction involves guiding the learner through a series of Statements and Re-Statements in a Subject;**

*** Bruner said that Classroom Learning should take place Inductively (Specific to Generalization).**

*** An optimum sequence is from ENACTIVE ICONIC SYMBOLIC;**

***Reinforcement: Extrinsic Rewards must be replaced by Intrinsic Rewards;**

*** Complex Ideas can be Taught at a Simplified Level First, and Complex Levels later on. Subjects would be Taught at Levels of gradually Increasing Difficultly.**

Merits of B.T.I.:

B.T.I. has following Merits:

* It allows students to proceed according to their abilities;

* Here, Teacher acts as a facilitator in constructing concepts;

* Here, Learners are encouraged to think logically;

* Learners are intrinsically motivated because he is learning actively;

Demerits of B.T.I.:

- It is Difficult to Carry Out in Large Groups and with Slow Learners;
- Sometimes Teachers may be Chaotic;
- A few Students may be Quick in Responding Leaving the Rest Behind;
- It is appropriate for Advance Level Learners;
- It is more applicable for Science Subjects;

Classroom Implication:

* Motivate Learners to Participates;
*Actively Engages Learners in Learning Process;
* Encourages Autonomy & Independences;
* Promote the Development of Creativity & Problem-Solving Skills;
* Provides an Individualized Learning Experience;