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**LEARNING GUIDE**

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**CONCRETE OPERATIONS:  
PIAGET'S DEVELOPMENTAL THEORY**

*With*

David Elkind, Ph.D.

(30 minutes)



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(Visuals include clinical interviews and footage from a First Grade Class)

## **I. Introduction**

***Adaptation:*** An ongoing process of assimilation and accommodation. As a child becomes older, thought and action become increasingly flexible and freed from the domination of immediate perception.

***Age related stages:***

Sensorimotor (birth to about two years):

- Children construct a world of permanent objects.

Pre-operational (about two years to about six years):

- Children represent the objective world and relations within it with symbols.

Concrete operations (about six to twelve years old):

- Children develop logic and are able to use rules and units. Thoughts remain rooted in the present with real objects.

## **II. Logical achievements of the Concrete Operational period**

***Transitivity***

Definition: Deductive logic, entertaining two concepts or relationships at the same time.

- Seriation tasks are one demonstration of this ability.
- The use of rules is another.
- Reversibility

***Two Sub-processes***

Compensation: The recognition that one operation can be annulled by another.

- Demonstrated with the arithmetic processes of inversion: Addition can be reversed by subtraction.

Reciprocity: The recognition that what a fixed quantity gains in one dimension, it loses in another.

- Demonstrated with the conservation of number, in this case pennies. The combination of the logical processes of transitivity and reversibility lead to the attainment of the unit concept.

### *Unit Concept*

Unit concept defined: Realization that a symbol or quantity can be transformed but remain essentially the same.

Conservation: Judgment that a quantity is the same despite a difference in its appearance.

Letters: True reading occurs when a child realizes that a letter can have different forms, for instance "o" can be decoded whether it is pronounced as a long "o" or short "o" or written as a capital "O" or small "o".

- The ability to use rules and the ability to use the unit concept results from the change in the forms of thinking of this life stage.

### **III. Answers to criticisms of Piaget's work:**

- Piaget said that inability to perform some of the tasks is not due to a lack of vocabulary, but rather the absence of the cognitive concept that would enable one to perform the task.
- Some subsequent researchers have modified the tasks to make them simpler thus allowing children to deal with them without resorting to logic.
- Piaget himself came to give greater weight to the importance of experience in his later work. Lev Vygotsky wrote more fully about the role of mediation in learning.

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