Learning Across the LifeSpan
### Topics in Learning in LifeSpan Development

- **Developmental Learning**: the act of developing skills in order to interact with your environment based upon intake and use of information/observation.

- **Cognition**: internal integration of information/learning/personality and the use of said information.

- **Intelligence**: the measurement of an individual's informational retention/recall/ and structure upon request.

- **Memory**: both short and long-term informational storage and retrieval.
Characteristics of the Sensorimotor Stage

- The first stage of Piaget's theory lasts from birth to approximately age two and is centered on the infant trying to make sense of the world.

Some key things to remember about the sensorimotor stage:

- During the sensorimotor stage, an infant's **knowledge of the world is limited to his or her sensory perceptions and motor activities.**
- Behaviors are limited to simple motor responses caused by sensory stimuli.
- Children utilize skills and abilities they were born with (such as looking, sucking, grasping, and listening) to learn more about the environment.
Sensorimotor Stage: 0-2

1. Reflexes (0-1 month):
   - During this substage, the child understands the environment purely through inborn reflexes such as sucking and looking.

2. Primary Circular Reactions (1-4 months):
   - This substage involves coordinating sensation and new schemas. For example, a child may suck his or her thumb by accident and then later intentionally repeat the action. These actions are repeated because the infant finds them pleasurable.

3. Secondary Circular Reactions (4-8 months):
   - During this substage, the child becomes more focused on the world and begins to intentionally repeat an action in order to trigger a response in the environment. For example, a child will purposefully pick up a toy in order to put it in his or her mouth.
Sensorimotor Stage: 0-2

4. Coordination of Reactions (8-12 months):
   - During this substage, the child starts to show clearly intentional actions.
   - The child may also combine schemas in order to achieve a desired effect. Children begin exploring the environment around them and will often imitate the observed behavior of others. The understanding of objects also begins during this time and children begin to recognize certain objects as having specific qualities. For example, a child might realize that a rattle will make a sound when shaken.

5. Tertiary Circular Reactions (12-18 months):
   - Children begin a period of trial-and-error experimentation during the fifth substage. For example, a child may try out different sounds or actions as a way of getting attention from a caregiver.
The **Preoperational stage** is the second stage in Piaget's theory of cognitive development. This stage begins around age two as children start to talk and last until approximately age seven. During this stage, children begin to engage in symbolic play and learn to manipulate symbols. However, Piaget noted that they do not yet understand concrete logic.
Preoperational stage: Ages 2-7

Characteristics of the Preoperational Stage

- The preoperational stage occurs roughly between the ages two and seven. Language development is one of the hallmarks of this period. Piaget noted that children in this stage do not yet understand concrete logic, cannot mentally manipulate information, and are unable to take the point of view of other people, which he termed egocentrism.

- During the preoperational stage, children also become increasingly adept at using symbols, as evidenced by the increase in playing and pretending. For example, a child is able to use an object to represent something else, such as pretending a broom is a horse. Role playing also becomes important during the preoperational stage. Children often play the roles of "mommy," "daddy," "doctor" and many other characters.
Egocentrism

One of the famous techniques to demonstrate egocentrism involved using a three-dimensional display of a mountain scene. Often referred to as the "Three Mountain Task", children are asked to choose a picture that showed the scene they had observed. Most children are able to do this with little difficulty. Next, children are asked to select a picture showing what someone else would have observed when looking at the mountain from a different viewpoint. Invariably, children almost always choose the scene showing their own view of the mountain scene. According to Piaget, children experience this difficulty because they are unable to take on another person's perspective.
Another well-known experiment involves demonstrating a child's understanding of conservation. In one conservation experiment, equal amounts of liquid are poured into two identical containers. The liquid in one container is then poured into a different shaped cup, such as a tall and thin cup or a short and wide cup. Children are then asked which cup holds the most liquid. Despite seeing that the liquid amounts were equal, children almost always choose the cup that appears fuller.
Possible Issues

- Organic damage
- Temperamental challenges: difficulties with mood expression
- Safety/ Security/ Consistency
- Maternal Depression
- Family Violence
Disorders of Early Childhood

Attachment Issues
- Reactive attachments disorder: too little or too much social involvement
- Separation Anxiety Disorder: concern over leaving the parents

Oppositional Defiant Disorder

Fetal Alcohol Syndrome/ Substance Withdrawal Issues

Autism: limited or no ability for social interaction, language difficulties, limited understanding of social cues
Concrete Operational Stage: Ages 7-11

Characteristics of the Concrete Operational Stage

- The concrete operational stage begins around age seven and continues until approximately age eleven. During this time, children gain a better understanding of mental operations. Children begin thinking logically about concrete events, but have difficulty understanding abstract or hypothetical concepts.
Piaget determined that children in the concrete operational stage were fairly good at the use of inductive logic (inductive reasoning). Inductive logic involves going from a specific experience to a general principle. An example of inductive logic would be noticing that every time you are around a cat, you have an itchy eyes, a runny nose, and a swollen throat. You might then reason from that experience that you are allergic to cats.

On the other hand, children at this age have difficulty using deductive logic, which involves using a general principle to determine the outcome of a specific event. For example, a child might learn that A=B, and B=C, but might still struggle to understand that A=C.
Concrete Operational Stage: Ages 7-11

Reversibility

- One of the most important developments in this stage is an understanding of reversibility, or awareness that actions can be reversed. An example of this is being able to reverse the order of relationships between mental categories. For example, a child might be able to recognize that his or her dog is a Labrador, that a Labrador is a dog, and that a dog is an animal.
Concrete Operational Stage: Ages 7-11

Other Key Characteristics

- Another key development at this stage is the understanding that when something changes in shape or appearance it is still the same, a concept known as conservation. Kids at this stage understand that if you break a candy bar up into smaller pieces it is still the same amount at when the candy was whole.

- The concrete operational stage is also marked by the disappearance of egocentrism. While children in the preceding stage of development (the preoperational stage) struggle to take the perspective of others, kids in the concrete stage are able to think about things the way that others see them.
Disorders of Middle Childhood

- Ongoing early childhood issues
- Trauma Exposure
- Forms of abuse: verbal, physical, sexual, emotional, psychological
- Conduct Disorder
- Limited familial or social interaction
- Parental support of school
- Informational Flow: TV/Internet
Formal Operational Stage: Ages 12 onward

Characteristics of the Formal Operational Stage

The formal operational stage begins at approximately age twelve and lasts into adulthood. During this time, people develop the ability to think about abstract concepts. Skills such as logical thought, deductive reasoning, and systematic planning also emerge during this stage.
Formal Operational Stage: Ages 12 onward

Logic

- Piaget believed that deductive reasoning became necessary during the formal operational stage. Deductive logic requires the ability to use a general principle to determine a particular outcome. Science and mathematics often require this type of thinking about hypothetical situations and concepts.

Abstract Thought

- While children tend to think very concretely and specifically in earlier stages, the ability to think about abstract concepts emerges during the formal operational stage. Instead of relying solely on previous experiences, children begin to consider possible outcomes and consequences of actions. This type of thinking is important in long-term planning.
Problem-Solving

In earlier stages, children used trial-and-error to solve problems. During the formal operational stage, the ability to systematically solve a problem in a logical and methodical way emerges. Children at the formal operational stage of cognitive development are often able to plan quickly an organized approach to solving a problem.

Other Characteristics of the Formal Operational Stage

Piaget believed that what he referred to as “hypothetico-deductive reasoning” was essential at this stage of intellectual development. At this point, teens become capable of thinking about abstract and hypothetical ideas. They often ponder “what-if” type situations and questions and can think about multiple solutions or possible outcomes.

While kids in the previous stage (concrete operations) are very particular in their thoughts, kids in the formal operational stage become increasingly abstract in their thinking. They also develop what is known as metacognition, or the ability to think about their thoughts as well as the ideas of others.
Observations About the Formal Operational Stage

”The formal operational thinker has the ability to consider many different solutions to a problem before acting. This greatly increases efficiency, because the individual can avoid potentially unsuccessful attempts at solving a problem. The formal operational person considers past experiences, present demands, and future consequences in attempting to maximize the success of his or her adaptation to the world.” (Salkind, 2004)
Additional Learning Distractors/ Difficulties

- Substance use disorders
- Stress response set; divorce, work issues, etc.
- Trauma exposure
- Health concerns; accidental head trauma
- Personality disorders; OCD, Borderline, Narcissistic
- Affective disorders; depression, anxiety, bi-polar
Acquisition: 0-12 the goal is to acquire knowledge; it’s simply information and absorbed without organization or significance

Achieving: 13-20 cognition becomes goal directed based upon personal desires for achievement. Consideration now needs to occur for circumstance and consequence of choice

Responsible: 20-30 the person has acquired competence an independence and must move beyond personal goals and consider responsibility to others
Executive: 30-50 (only those in power positions) need to think in terms of social responsibility

Re-integrative: 35-60 the goal becomes simplification with a focus upon the meaningful. Individuals focus upon personal interest and values. Looking to make sense of life.
Intelligence & Memory into Adulthood

Debates over the increase or decline of intelligence over lifetime span. Beliefs that IQ performance peaks at age 18, stays consistent into 20’s, and then declines with age

- Studies remain inconsistent in this area and are influenced by research design options. Most research suggests that declines are minimal until into the 60’s unless influenced by other disorders or health issues.

IQ based upon verbal/non-verbal/cultural influence
Intelligence & Memory into Adulthood

Forms of Intelligence;
- Fluid: processing of new information declines in adulthood
- Crystallized: learned cognitive processes increases in adulthood

Most people show stability in memory into their 60’s; some of this can be based upon accessing experience and tying experience to information.
Impacts to Intelligence/ Memory

- Early life onset difficulties can be attributable to trauma, familial issues, limited informational exposure, peer & support group influence, health issues.

- Mid life and late stage difficulties can be attributable to dementia, stroke, Alzheimer’s, substance disorders, mental activity, psychological health issues (dep/anx/transition).
Questions & Discussion