

1. ARTHUR JENSEN'S THEORY

Also known as the Theory of Mental Functioning, this theory categorizes intelligence into 2 distinct sequential levels: Level I & Level II. These levels describe the internal processes of how the mind functions & interacts with information.

- Level I - Associative learning - This level primarily revolves around rote learning & memory. The defining characteristic of Level I is that the output is more or less identical to the input. Ex: - If an individual is given specific information to memorize such as a list of names - they simply reproduce that exact information later. There is no transformation or deep processing of the data, as the focus is solely on retention & recall.

- Level II - Cognitive competence - Level II involves complex cognitive processes such as critical thinking, analysis & problem solving. At this level, an individual
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 does not just recall or reproduce input. Instead they transform, interpret & process the information to produce an effective & original output. This level represents a higher degree of mental maturity & cognitive development, allowing for creative & deep analytical skills rather than simple memorization.

2. CAMPION & BROWN'S INTELLIGENCE THEORY

This dual system model proposed by Campion & Brown suggests that human intelligence is composed of two primary systems that work together.

- Architecture system - This system is biologically based. It represents the innate, neurological structure of an individual's intelligence, meaning it is not something that is acquired through learning or external training. It acts as the fundamental base for all of a person's intellectual functioning & cognitive processes. This system is independent of environmental factors like education or cultural background.
- Executive system - It is not innate. It is highly dependent on an individual's experiences & learning processes. This system acts as a storehouse for knowledge & information. It is responsible for higher order mental functioning, such as developing learning strategies & metacognition or self awareness of one's own thought processes. It handles complex higher level cognitive tasks.

It allows individuals to acquire new skills such as learning music through training that are not biologically hardwired.

Intelligence is created by the interaction of these 2 systems. While the architecture system handles basic mental foundations, the executive system is responsible for the complex, learned cognitive behaviors that define mature intelligence.

3. CRYSTAL AND FLUID INTELLIGENCE THEORY

Proposed by Raymond Cattell and expanded by John Horn so also known as Cattell-Horn theory. The theory proposes that intelligence is not a single monolithic entity but is instead divided into 2 distinct separate types. These two types interact & intermingle with one another to produce an individual's overall intelligence.

• Fluid intelligence -

- Definition - It refers to the basic mental capacity required for learning & problem-solving. This is the "mental engine" an individual uses to process new information.

- Biological basis - Fluid intelligence is deeply rooted in neurological development. It is largely considered to be derived from biological factors rather than learned knowledge.

- Independence from culture - It is relatively free

- from the influence of formal education & culture.
- **Application** - This type of intelligence is primarily utilized when facing new or novel situations where prior training or experience does not provide a direct answer. It is essential for adapting to unfamiliar environments, comprehending complex information, reasoning through tasks & identifying relationships & patterns between diff concepts.
 - **Developmental timeline** - Once an individual completes the adolescent stage, their fluid intelligence capacity is considered to be firmly established, marking the conclusion of its developmental phase.
 - **Crystallized intelligence** -
 - **Nature** - It is not innate. It must be actively learned & acquired over time through, experience, training & education. Both crystallized intelligence & executive system involve skills & knowledge that are specifically learned rather than born with.
 - **Acquisition** - This type of intelligence encompasses a person's accumulated fund of general information. It is identified through one's vocabulary, general knowledge of the world & understanding of cultural customs. Because it relies on day-to-day life interactions, specific skills such as reading or coding are developed through consistent practice & experience.

* Comparison of fluid & crystallized intelligence

- Fluid intelligence remains largely free from the influence of formal training & is characterized by mental processes like reasoning, thinking & imagination. It reaches full development by end of adolescence.
- Crystallized intelligence grows throughout one's life as one interacts with the environment & gains training & experience.

4. PASS MODEL OF INTELLIGENCE

The model was developed by researchers J.P. Das, Jack Naglieri & Kirby in 1994.

- * Core concepts - The model posits that intellectual activities are not isolated events but rather the result of interdependent functioning between 3 distinct neurological systems. These are referred to as "functional units of brain". These functional units are collectively responsible for 3 main cognitive processes that define the PASS acronym:
 1. Arousal & attention
 2. Simultaneous & successive processing
 3. Planning

- * Arousal & attention - Arousal allows us to attend to stimuli, which is the first step in processing information. For effective information processing, there must be an optimum level of arousal. If arousal is too high or low, it interferes with our ability to focus attention on relevant tasks. Arousal acts as a force that directs & maintains our

attention towards specific, relevant aspects of a task
 Ex: - Teacher announcing a test. The announcement serves as a stimulus that triggers arousal, which then compels the student to focus their attention specifically on the relevant chapters for that exam.

- Information processing - After focusing attention on a task, the brain must process that information to make sense of it & create meaningful patterns.
- Simultaneous processing - This involves integrating several stimuli into a single cohesive mental pattern
 Ex: - In Raven's progressive Matrices test, an individual must analyze a visual design with a missing piece & select the correct option by understanding the relationships between the figures.
- Successive processing - This type of processing occurs when information is handled in a specific, linear sequence. Ex: - learning digits or multiplication tables where the order of elements is critical to the learning process.
- Planning - It is the final phase of this cognitive process. It occurs after the brain has successfully attended to a stimulus & processed the information. Planning allows individuals to think through potential courses of action, implement strategies to reach a specific target & evaluate the effectiveness of those strategies. If a plan is not working, it allows for

modifications based on the requirements of the situation.
Ex:- In preparing for a test, a student must set goals, create a study schedule, & seek help or clarification if they encounter difficulties with the material.

- Nature of the PASS model - The PASS processes do not function in a vacuum. They operate on a knowledge base that an individual has developed either formally through structured education or informally through life experiences. The processes within this model are interactive & dynamic. Because individuals can adapt their planning & modify their approach based on the situation, the system is flexible & capable of change.

- Cognitive Assessment system (CAS) - Developed by Das & Naglieri, this is a battery of tests designed to assess intelligence by measuring basic cognitive functions. The system includes both verbal & non-verbal tasks & is designed for individuals between 5 & 18 yrs of age. The results from these assessments are used to identify cognitive deficits in children facing learning problems. This allows educators to implement remedial teaching strategies tailored to the child's specific needs.

5. HOWARD GARDNER'S MULTIPLE INTELLIGENCE

- Core concepts - Gardner argues that there is no such thing as a single, uniform intelligence. Various types of intelligence exist independently of one

another. Being highly skilled in one area such as logic or maths does not mean an individual will be equally talented in others, like music or physical activity. While these intelligences are independent they can work together to help individuals solve complex problems. Gardner developed this theory by studying exceptionally talented individuals who displayed unique high level abilities in specific domains.

• Nine types of intelligence.

- Logical-mathematical intelligence - Involves the ability to engage in scientific thinking, logical reasoning & complex problem solving. Individuals with a high level of this intelligence are adept at thinking critically & logically about various concepts & situations. More pronounced in scientists, mathematicians & Nobel Prize winners. Possessing this intelligence does not imply that an individual lacks other types; rather, it highlights their comparative strength in analytical & structured thought processes.
- Linguistic intelligence - Involves the ability to produce, understand & effectively utilize language. It includes skills related to vocabulary, fluency & the structural use of words. Individuals who possess high linguistic intelligence are referred to as being "word smart". They demonstrate a natural talent for playing with words & expressing complex ideas through written or spoken language. Most prominent in people whose work centers around

the creative or technical use of language such as poets, writers & authors. These individuals are able to observe the world & transform those observations into precise, descriptive or creative language, utilizing their mental flexibility & linguistic fluency to communicate effectively.

- Musical intelligence - This involves the ability to recognize, manipulate & create musical patterns, rhythms & sounds. Individuals with this intelligence are sensitive to auditory patterns & can effectively manipulate them. Ex:- Content creators who can creatively remix or adapt existing audio samples into new, engaging musical formats.

- Spatial intelligence - This intelligence relates to the capacity to visualize & manipulate objects & patterns in one's mind. It involves understanding how things exist & change in space. Key professions that heavily utilize this skill include pilots, sailors, sculptors, painters, architects. These professionals rely on strong visual imagery to design, build or navigate effectively.

- Bodily-Kinesthetic intelligence - Involves the skillful use of one's entire body to express, ideas, feelings, or to solve problems. It is characterized by physical flexibility, creativity & the ability to control body movements with precision. Professions include

athletes, dancers, actors, gymnasts. These individuals have a deep understanding of how to manipulate their bodies to achieve specific patterns or execute complex physical tasks.

- Interpersonal intelligence - Relates to an individual's ability to understand the feelings, behaviours & motives of other people. It involves high levels of sensitivity toward others & strong communication skills to build effective relationships. Professions include psychologists, counselors & politicians. Politicians, in particular, rely on this skill to gauge the emotions & needs of the public which helps them connect with voters effectively. It is essentially about being "people smart" & navigating social interactions with insight.
- Intrapersonal intelligence - It is about the capacity to look inward & understand oneself. It involves deep awareness of one's own feelings, motives & desires. It is the ability to know what you want to achieve, your personal goals, & your internal emotional state. Philosophers & spiritual leaders exhibit this type of intelligence, as they dedicate time to introspective thinking & personal understanding.
- Naturalistic intelligence - Involves a high sensitivity & awareness towards the natural world & its features. Individuals with this intelligence are highly attuned to nature, including the flora & fauna around them. They

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 have a natural ability to understand, observe & categorize aspects of the natural environment. Farmers, hunters, tourists, botanists, zoologists possess strong naturalistic intelligence, as their work or hobbies require a deep understanding of natural ecosystem.

- Existential intelligence - It involves the capacity to ponder deep, philosophical questions about human existence such as the meaning of life, death & one's purpose in the universe. Individuals with this intelligence are often interested in cosmology & philosophy.

- Practical application - This framework helps educators identify & nurture a child's unique talents & interests rather than using a one-size-fits-all approach.

EMOTIONAL INTELLIGENCE

- Origin of the term: The term emotional intelligence was coined by Peter Salovey & John Mayer in 1990. American psychologist Daniel Goleman is credited with bringing the concept into broader mainstream discourse through his influential book "Working with Emotional Intelligence".
- Definition and key concepts - It is defined as an innate potential that allows an individual to recognize, understand, manage & express emotions effectively. It is not about suppressing emotions or avoiding tears; rather, it focuses on how one

manages their emotional states. Emotional intelligence refers to the ability to get along with others & make sound personal decisions. Being emotionally intelligent implies the ability to understand oneself, express feelings verbally or through behavior. Self-motivate & regulate emotions. Evaluate risks related to emotional situations & resolve conflicts effectively.

• Daniel Goleman's model - It has 5 key components:-

1. Self-awareness - Being conscious of our own emotional state & identity.
2. Self-regulation - The ability to control & manage our emotional responses.
3. Internal motivation - Being driven from within to achieve goals rather than relying solely on external factors.
4. Empathy - The capacity to understand & share the feelings of others.
5. Social skills - The ability to interact effectively & manage interpersonal relationships.

• Misconceptions on EI - It is not about ignoring or hiding our feelings. It does not mean letting emotions take over our thinking or decision-making processes. It is advised to avoid making major decisions when overwhelmed by extreme emotions like anger. It is not a permanent, unchangeable personality trait. It is not a direct measure of cognitive or academic

intelligence, nor does it predict one's success in life.

• Characteristics of high emotional intelligence

- Happiness - They tend to appear generally happy & content with their circumstances.
- Confidence - They exhibit a high level of confidence in their decision-making & interactions.
- Self-esteem - A healthy sense of self worth is clearly visible.
- Optimism - They maintain an optimistic outlook, focusing on positive outcomes rather than panicking or spiraling into negativity during difficult situations.
- Behavioral management - While they may still face behavioral challenges, their high E.I. allows them to handle their emotions effectively rather than being overwhelmed by them.

• Importance of emotional intelligence

- Relationship building - It serves as a foundation for developing healthy & strong interpersonal relations.
- Health & achievement - Individuals who are emotionally healthy & intelligent are better equipped to achieve their goals & maintain overall well being.
- Career growth - Because high EI facilitates better social interactions, it is a significant asset in career building.
- Reduced delinquency - By learning to handle emotions effectively rather than being impulsively

reactive, individuals can avoid poor decision-making that may otherwise lead to negative social behaviors or delinquency.

- Golden principles for developing EI
- Labeling feelings - Learn to identify & label your own feelings rather than blaming others or external situations for your emotional state.
- Distinction - Clearly distinguish between feelings & thoughts, they are separate processes that should not be confused.
- Self-responsibility - Take full responsibility for your own emotions instead of making others the target of your frustration.
- Using feelings - Utilize your emotions to aid in decision making, ensuring they do not dominate or override your logical thinking.
- Respect & empathy - Show respect for the feelings of others which is a form of empathy.
- Channeling energy - Focus on feeling energized to solve problems rather than allowing yourself to become consumed by anger.
- Validation - Validate the feelings of others; avoid dismissing their experiences, even if you disagree with their perspective.
- Empowerment vs. control - When offering advice, avoid commanding, controlling, criticizing or judging. Instead,

frame your input as a personal suggestion while acknowledging that the ultimate decision belongs to the other person.

• Implications in teaching learning

- Teacher-student empathy - By practicing empathy, teachers can better understand their students' individual needs & situations. This creates a supportive environment where both teachers & students can thrive.
- Effective teaching - Understanding individual differences among students allows teachers to tailor their approach, leading to more effective teaching learning process.
- Lifelong value - EI is a lifelong skill. According to Daniel Goleman, being emotionally intelligent helps individuals - both teachers & students - handle various life situations with greater maturity & clarity.