

THEORIES OF INTELLIGENCE

1. MONO-FACTOR OR UNI-FACTOR THEORY

- Single factor of intelligence - Alfred Binet proposed that intelligence consists of a single, general factor that underlies all mental activities. If an individual is proficient in one area, this theory posits they should also be proficient in others because the same underlying factor drives their performance.
- Historical context - Binet is credited as the first psychologist to formalize the concept of intelligence & develop the first intelligence test, alongside the concept of mental age.
- Concept - It views intelligence as a single set of abilities applicable to solving any problem within an individual's environment.
- Limitations - The theory faced criticism & disputes once data collected from Binet's own tests were analyzed. Researchers found that performance did not always align with the idea of a single, universal factor governing all tasks, leading to the development of alternative theories.

2. UNITARY OR MONARCHIC THEORY

- Core concept - Given by Johnson & Stern, this perspective posits that intelligence consists of a single, unified factor. This factor represents a "fund of intellectual competence"

that is universal & applied to every activity an individual performs.

- **Adaptability** - Intelligence is viewed here as the individual's capacity for adaptiveness - the ability to adjust one's behaviour effectively when the environment changes. Supporters of this view generally believe that this "all round mental efficiency" is an inborn talent present from birth.

- **Limitations** - The theory suggests that if a person is intelligent in one task, they should be equally capable in all others because of this single universal factor. So according to this view, Isaac Newton who was a great scientist could also have been equally successful as a great poet, if he had chosen, which is not true in reality. The major limitation is the inability to account for the diversity of human skills.

3. SPEARMAN'S TWO FACTOR THEORY

Charles Spearman in 1904 proposed that human intelligence is composed of two distinct factors:-

- **General factor (G-factor)** - Considered as the primary, universal mental energy present in everyone. It is present at the time of conception & is a natural, universal ability. It remains stable throughout a person's life & is used in every intellectual activity. It is believed to be fundamentally responsible for

general success in life, with higher amounts leading to greater potential for success.

- Specific factor (S-factor) - Unlike the G-factor, this relates to specific intellectual tasks. It is not innate but developed through practice, training & environment. It is applied only to certain activities. An individual can possess multiple S-factors for different skills & they vary significantly between people. It is essential for achieving excellence in a particular field working alongside the G-factor to drive performance.

- Educational implications - Knowing a student's specific general (G) & specific (S) abilities allow educators to provide more effective, targeted guidance. This helps teachers align their instructions with the student's unique mental strengths. By identifying what a student is naturally good at versus what they have learned, the educational process becomes more efficient & streamlined for the learner.

- Diagnosis & curriculum enrichment -

- Diagnostic value - The theory helps educators identify the root causes of a student's slow progress or unsatisfactory performance. By analyzing whether the issue stems from a lack of general mental ability or specific abilities, teachers can better understand the underlying challenges a student faces.

- Enrichment of curriculum - Understanding these

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intellectual factors allows for the modification of learning processes, such as memory, thinking, & reasoning. With this knowledge, educators can effectively enrich the curriculum & adapt their teaching methodologies to better suit the mental profiles of their students.

• Focus and implementation in education

The theory supports the creation of tailored enrichment programs. Whether a student is gifted, creative, a slow learner or considered backward, understanding these intellectual factors allows educators to provide appropriate interventions & personalized learning paths. Teaching methodologies & classroom focus should be aligned with a student's specific intelligence profile ensuring that educational resources are used effectively to enhance performance.

4. OLIGARCHIC OR SAMPLING THEORY

The theory was proposed by Godfrey Thomson in 1939.

• Intellectual Ability groups - The theory proposes that intellectual abilities are organized into specific groups. These groups are often independent of one another.

• Intra group relationships - There is a close positive relationship between abilities within the same group. If a person excels in one activity within a particular group, they are likely to succeed in other activities.

within that same group.

- Inter-group differences - The theory posits that success in one specific group does not guarantee success in a completely different group. While activities within a group share a strong link, they may share no such connection to activities belonging to an entirely different group.

- Practical implications -

- Intelligence is group specific - A child may demonstrate high intelligence within one specific group of knowledge such as a scientific domain but may not show the same level of aptitude in a completely different group such as humanities.

- Potential for uniformity within groups - While success in one group does not guarantee performance in another, an individual is more likely to be equally intelligent across various subjects that belong to the same specific group.

- The knowledge gap - Being knowledgeable in one area does not automatically mean the individual will also excel in a distant area. Being skilled in one subject ex:- Physics increases the likelihood of performing well in a related subject within the same group. ex:- Chemistry. However, this aptitude does not automatically transfer to an unrelated group such as History.

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5. THORNDIKE'S MULTIPLE FACTOR THEORY

OR

ANARCHIC THEORY

- Core concepts - According to Thorndike intelligence is composed of multiple independent factors rather than one overarching ability. There is no meaningful connection between these different intellectual abilities. Excelling in one specific activity does not guarantee or predict success in another unrelated area. All intellectual tasks & abilities operate independently of one another, rather than relying on a common factor.
- Four attributes of intelligence -
 - Level or Altitude - This refers to the degree of difficulty of a task. It measures the complexity of the problems an individual is capable of solving, indicating the 'height' of their intellectual capacity.
 - Range or Width - This signifies the number of different tasks at a specific difficulty level that a person can successfully manage. Even within a single level of difficulty, there is a variety of tasks that test different skills, providing a broader measure.
 - Axos - This represents the summation or total count of all situations or tasks that an individual can respond to correctly across different levels.
 - Speed - This is the rapidity with which an individual

Individual can respond to & complete the tasks presented within an intelligence test.

These 4 aspects are essential for assessing intelligence as they provide a multidimensional view rather than relying on a single score.

Three types of intelligence -

- **Abstract intelligence** - This is the ability to understand & manipulate symbols, words, numbers, formulas & diagrams. It is essential for solving complex academic or theoretical problems.
- **Concrete intelligence** - This refers to the ability to deal with physical objects & things. It is often applied in skilled trades & the use of tools or appliances.
- **Social intelligence** - This is the capacity to understand & interact effectively with people. It involves navigating social relationships, making friends & behaving appropriately in various social situations.

Educational implications -

- **Diagnostic Assessment** - By understanding the four attributes & 3 types of intelligence, educators can better diagnose the causes of slow progress in students & identify specific areas for improvement.
- **Curriculum & instruction** - These concepts allow for modifications in the curriculum & teaching methods to better suit the diverse intellectual needs of learners.
- **Targeted interventions** - Teachers can focus their

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attention on specific areas, design enrichment programs to bolster weaker skills & provide remedial teaching tailored to a student's specific profile.

- **Guidance** - The theory serves as a foundational basis for providing effective guidance to students, helping them navigate their educational path.

6. STERNBERG'S TRIARCHIC THEORY

- **Definition** - Sternberg defines intelligence not just as a static score, but as the mental capacity to adapt to, shape & select environments to successfully achieve goals within a specific culture or society.

- **Three basic types of intelligence** -

- **Componential or Analytical intelligence**

Reflects the traditional view of intelligence often measured by academic achievement. Frequently referred to as being "book smart". This intelligence involves the ability to think critically & analytically. Consists of 3 sub components :-

- **Knowledge Acquisition component** - This involves learning & acquiring new information in a meaningful way by connecting it to existing knowledge already held in one's memory. It includes encoding, combining & comparing information.
- **Meta component** - This relates to "cognition about cognition". It is the ability to reflect on, control,

monitor, & evaluate one's own thinking processes.

- Performance component - This is the stage where the strategies developed by the meta components are actually executed or applied to solve problems.
- Experiential or creative intelligence - This type of intelligence emphasizes creativity, originality & the ability to handle novel situations. Key aspects include:
 - Handling novelty & automation - Automation refers to processing information that is already familiar without requiring deep conscious attention. Novelty is the ability to generate new, original & innovative ideas.
- Problem solving - This intelligence is used to apply past experiences in order to solve brand new unfamiliar problems. It is the capacity to adapt previous knowledge to create new solutions, inventions or discoveries.
- Situational insight - A person high in this intelligence can quickly identify which specific information is most relevant or useful in a completely new environment or situation.
- Contextual or practical intelligence -
- Definition :- It is often described as street-smarts or business sense. It involves the practical ability to handle day-to-day life, manage relationships with others such as peers or authority figures & solve problems in real world settings.

- Core mechanisms - The theory outlines 3 specific ways individuals with high practical intelligence interact with their environment:
- Adaptation - Adjusting oneself to fit into a new environment.
- Shaping - Modifying the environment to better suit one's own requirements or needs.
- Selection - Choosing to abandon an old environment in favor of a completely new one that is more suitable.