

DEPARTMENT OF PSYCHOLOGY

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Advance General Psychology, sem-1st

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INTELLIGENCE

The term intelligence refers to individual's ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by careful thought. We need intelligence in our day to day life. Our intelligence is much affected by environmental factors. It has been found that generation by generation IQ increases and this is known as FLYNN EFFECT.

E.g. 1860- IQ 60-70

1960- IQ 70-90

2018- 90-110

Different psychologists have categorized intelligence in different ways. Let us discuss in brief.

THEORIES OF INTELLIGENCE

Guilford's theory of intelligence

In Guilford's Structure of Intellect (SI) theory, intelligence is viewed as comprising operations, contents, and products. There are 6 kinds of operations (cognition, memory recording, memory retention, divergent production, convergent

production, evaluation), 6 kinds of products (units, classes, relations, systems, transformations, and implications), and 5 kinds of contents (visual, auditory, symbolic, semantic, behavioral). Since each of these dimensions is independent, there are theoretically 180 different components of intelligence.

Structure of Intellect theory

According to Guilford's Structure of Intellect (SI) theory (1955), an individual's performance on intelligence tests can be traced back to the underlying mental abilities or factors of intelligence. SI theory comprises up to 180 different intellectual abilities organized along three dimensions: operations, content, and products.

The Structure of Intellect Theory advanced by Guilford was applied by [Mary N. Meeker](#) for educational purposes.^[3]

Operations dimension

SI includes six operations or general intellectual processes:

1. [Cognition](#) - The ability to understand, comprehend, discover, and become aware of information
2. Memory recording - The ability to encode information

3. Memory retention - The ability to recall information
4. Divergent production - The ability to generate multiple solutions to a problem; creativity
5. Convergent production - The ability to deduce a single solution to a problem; rule-following or problem-solving
6. Evaluation - The ability to judge whether or not information is accurate, consistent, or valid

Content dimension

SI includes four broad areas of information to which the human intellect applies the six operations:

1. Figural - Concrete, real world information, tangible objects, things in the environment - It includes A. visual: information perceived through sight, B. auditory: information perceived through hearing, and C. kinesthetic: information perceived through one's own physical actions
2. Symbolic - Information perceived as symbols or signs that stand for something else, e.g., Arabic numerals, the letters of an alphabet, or musical and scientific notations
3. Semantic - Concerned with verbal meaning and ideas - Generally considered to be abstract in nature.
4. Behavioral - Information perceived as acts of people (This dimension was not fully

researched in Guilford's project. It remains theoretical and is generally not included in the final model that he proposed for describing human intelligence.)

Product dimension

As the name suggests, this dimension contains results of applying particular operations to specific contents. The SI model includes six products in increasing complexity:

1. Units - Single items of knowledge
2. Classes - Sets of units sharing common attributes
3. Relations - Units linked as opposites or in associations, sequences, or analogies
4. Systems - Multiple relations interrelated to comprise structures or networks
5. Transformations - Changes, perspectives, conversions, or mutations to knowledge
6. Implications - Predictions, inferences, consequences, or anticipations of knowledge

Therefore, according to Guilford there are $5 \times 6 \times 6 = 180$ intellectual abilities or factors.