

Intelligence

By

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Cognitive Abilities

The capacity to:

- reason,
- remember,
- solve problems and
- make decisions

Intelligence

- **One of the major cognitive abilities**
- **Intelligence includes three main characteristics:**
- The ability to learn from one's experiences, acquire knowledge,
- Use resources and skills effectively to solve problems
- Adapting to new situations.

Theory of Multiple Intelligence

- Gardener (1993) mentioned that there are multiple components for intelligence:
 - Linguistic abilities
 - Logical/mathematical
 - Spatial
 - Musical

Are There Multiple Intelligences?



- **Social Intelligence**
 - the know-how involved in comprehending social situations and managing oneself successfully
- **Emotional Intelligence**
 - ability to perceive, express, understand, and regulate emotions

Cattell's View of Intelligence - Intelligence as a Few Basic Abilities

- Fluid Intelligence
 - The ability to think on the spot and solve novel problems
 - The ability to perceive relationships
 - The ability to gain new types of knowledge
- Crystallized Intelligence
 - Factual knowledge about the world
 - The skills already learned and practiced
 - Examples
 - Arithmetic facts
 - Knowledge of the meaning of words
 - State capitals

Factors that Influence Intelligence

Development and Growth of Intelligence

- Intelligence is the outcome of interaction between biological and environmental factors
- Both are dependent on and influencing each others

- **Biological Factors:**

genetics

Perinatal, natal and postnatal factors

- **Environmental Factors:**

- Culture, socioeconomic standard

- Malnutrition

- Education of parents

- The Child's Influence
 - Genetics
 - Genotype–Environment Interaction
 - Gender
- The Immediate Environment's Influence
 - Family Environment
 - School Environment
- The Society's Influence
 - Poverty
 - Race/Ethnicity



Group Differences

- **Rural /Urban**: socioeconomic and educational differences
- **Occupational differences**: certain intellectual abilities
- **Racial differences**:
- **Sex differences**: males more better in arithmetic and reasoning; females show better linguistic abilities

- **Girls as a group:**

- Tend to be stronger in verbal fluency, in writing, in perceptual speed (starting as early as the toddler years)

- **Boys as a group:**

- Tend to be stronger in visual-spatial processing, in science, and in mathematical problem solving (starting as early as age 3)

Development of IQ Tests

- Deviation IQ scores - a type of intelligence measure that assumes that IQ is normally distributed around a mean of 100 with a standard deviation of about 15.
 - Norms



Origins of Intelligence Testing



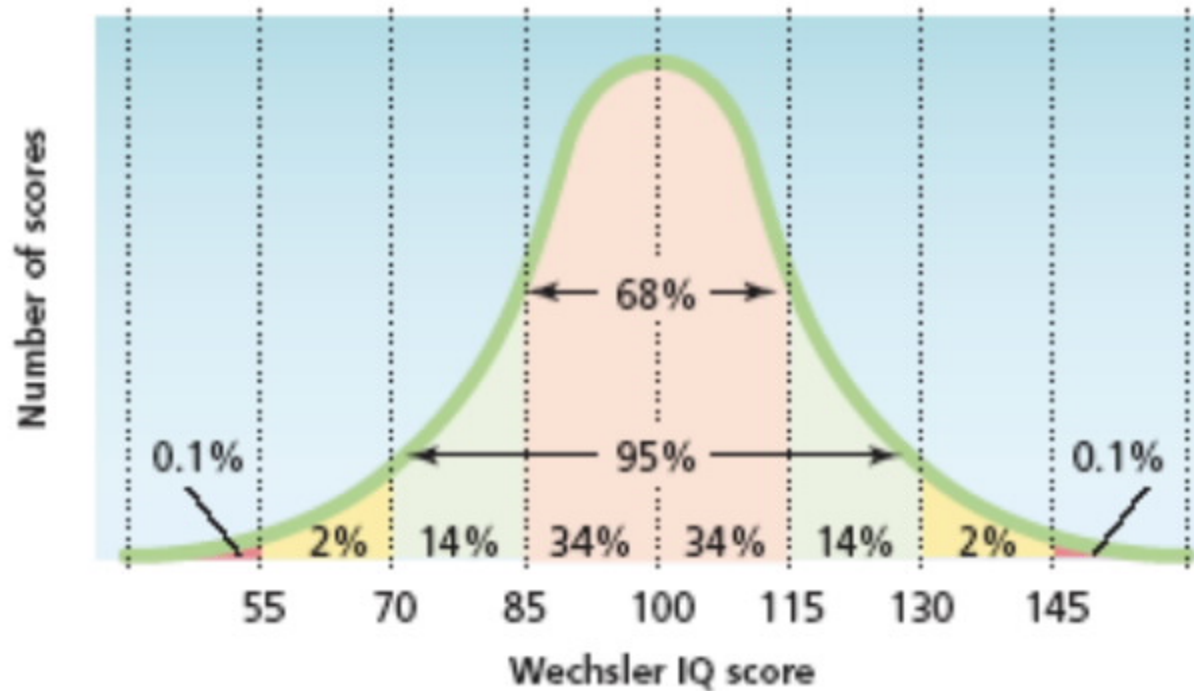
- Intelligence Quotient (IQ)
 - defined originally the ratio of mental age to chronological age multiplied by 100
 - $$\text{IQ} = \text{mental age} / \text{chronological age} \times 100$$
 - on contemporary tests, the average performance for a given age is assigned a score of 100

Assessing Intelligence



- Wechsler Adult Intelligence Scale (WAIS)
 - most widely used intelligence test
 - subtests
 - verbal
 - performance (nonverbal)

FIGURE 8.4 The Normal Curve



Applied Psychology

Intellectual Disability

- Developmentally delayed condition in which a person's behavioral and cognitive skills exist at an earlier developmental stage than the skills of others who are the same chronological age. A more acceptable term for mental retardation.

- **Intellectual disability or developmental delay is a condition in which IQ falls below 70 and adaptive behavior is severely deficient for a person of a particular chronological age.**

Intellectual Disability

- Four levels of delay are:
 - Mild: 55–70 IQ
 - Moderate: 40–55 IQ
 - Severe: 20–40 IQ
 - Profound: Below 20 IQ.
- Causes of developmental delay include deprived environments, as well as chromosome and genetic disorders and dietary deficiencies.



The Dynamics of Intelligence



TABLE 11.1

DEGREES OF MENTAL RETARDATION

Level	Typical Intelligence Scores	Percentage of Persons with Retardation	Adaptation to Demands of Life
Mild	50–70	85%	May learn academic skills up to sixth-grade level. Adults may, with assistance, achieve self-supporting social and vocational skills.
Moderate	35–49	10%	May progress to second-grade level academically. Adults may contribute to their own support by laboring in sheltered workshops.
Severe	20–34	3–4%	May learn to talk and to perform simple work tasks under close supervision but are generally unable to profit from vocational training.
Profound	Below 20	1–2%	Require constant aid and supervision.

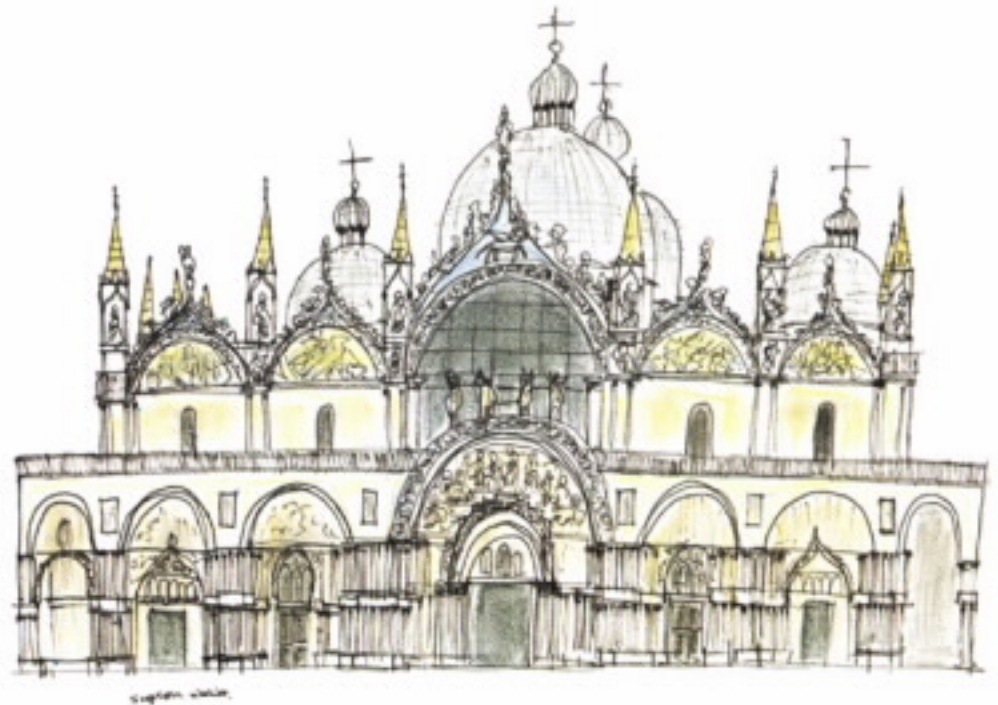
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Are There Multiple Intelligences?



■ Savant Syndrome

- condition in which a person otherwise limited in mental ability has an exceptional specific skill
 - computation
 - drawing



Thank You