

Individual Differences (Intelligence)

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Humans Are Largely Similar yet they differ in their:

- **Anatomical features**
- **Social Behavior**
- **Needs**
- **Abilities**
- **Vulnerabilities**

Origins of Similarity are:

- ▣ Genetic make-up
- ▣ Similar Environment
- ▣ Nature Vs Nurture
- ▣ Differences: beneficial or Not

Intelligence is difficult to define, it is:

- The capacity to learn.
- The ability to carry abstract thinking.
- Problem solving skills.
- The capacity to act purposefully, think rationally and deal effectively with the environment.
- The ability to undertake activities, characterized by: difficulty, complexity, abstractness, economy, adaptiveness to a goal, social values, and emergence of originals.

All definitions refer to capacity and ability of the person and not to what a person does.

The most commonly agreed upon aspects:

- ▣ Verbal ability as reflected by verbal skills.
- ▣ Problem solving skills as reflected by the search of scientists to find cure for cancer.

- ▣ The ability to learn from and adapt to everyday life, as reflected in adaptation of handicapped child to his /her inability to walk.

Assessment of intelligence

- ▣ Began in 1904 by Alfred Binet.
- ▣ Devised scales of what an average 2,3,4, 5... years old Can do and named it **mental age**. Which can be different from **chronological age** (years that the person has lived).
- ▣ These two ages were combined in one index of brightness, the **intelligence quotient (I.Q.)**
- ▣ $I.Q. = (\text{Mental age} / \text{Chronological age}) * 100$

Multiple intelligences

H. Gardner 1991

- ▣ **Linguistic**, use language effectively, read, write
- ▣ **Mathematical**, reasoning, calculation, puzzles
- ▣ **Spatial**, environment, drawing, orientation
- ▣ **Kinesthetic**, use body, dance, football
- ▣ **Musical**, sensitive to sound, rhythm, love music
- ▣ **Interpersonal**, friendly, good communication
- ▣ **Intrapersonal**, know own goals, motivated
- ▣ **Naturalistic / spiritual**, nature lover, dreamer

In details:

- **Linguistic** - using words effectively. These learners have highly developed auditory skills and often think in words. They like reading, playing word games, making up poetry or stories. They can be taught by encouraging them to say and see words, read books together. Tools include computers, games, multimedia, books, tape recorders, and lecture.
- **Logical -Mathematical** - reasoning, calculating. Think conceptually, abstractly and can see and explore patterns and relationships. They like to experiment, solve puzzles, ask cosmic questions. They can be taught through logic games, investigations, mysteries. They need to learn and form concepts before they can deal with details.

- **Visual-Spatial** - think in terms of physical space, as do architects and sailors. Very aware of their environments. They like to draw, do jigsaw puzzles, read maps, daydream. They can be taught through drawings, verbal and physical imagery. Tools include models, graphics, charts, photographs, drawings, 3-D modeling, video, videoconferencing, television, multimedia, texts with pictures/charts/graphs.
- **Bodily-kinesthetic** - use the body effectively, like a dancer or a surgeon. Keen sense of body awareness. They like movement, making things, touching. They communicate well through body language and be taught through physical activity, hands-on learning, acting out, role playing. Tools include equipment and real objects.
- **Musical** - show sensitivity to rhythm and sound. They love music, but they are also sensitive to sounds in their environments. They may study better with music in the background. They can be taught by turning lessons into lyrics, speaking rhythmically, tapping out time. Tools include musical instruments, music, radio, stereo, CD-ROM, multimedia.
- **Interpersonal** - understanding, interacting with others. These students learn through interaction. They have many friends, empathy for others, street smarts. They can be taught through group activities, seminars, dialogues. Tools include the telephone, audio conferencing, time and attention from the instructor, video conferencing, writing, computer conferencing, E-mail.
- **Intrapersonal** - understanding one's own interests, goals. These learners tend to shy away from others. They're in tune with their feelings; they have wisdom, intuition and motivation, as well as a strong will, confidence and opinions. They can be taught through independent study and introspection. Tools include books, creative materials, diaries, privacy and time. They are the most independent of the learners.

IQ ranges								
+150	130 - 149	115 - 129	85 - 114	70 - 84	69-50	49-35	34-20	<20
Considered normal					Mild MR	Moderate MR	Severe MR	Profound MR

Group differences in intelligence

- ▣ **Sex**, few differences between sexes, inferior problem solving by women, have more difficulty in shifting set.
- ▣ **Socioeconomic status**, rural children attain lower average IQ than city children, high socioeconomic class children get higher scores in IQ tests than low socioeconomic class children.
- ▣ There is no real IQ difference between races, more difference is intraracial.
- ▣ IQ is stable over time.

Wechsler adult intelligence scale (WAIS)

- ▣ An individual test administered by specially trained tester, widely used.
- ▣ Has 6 verbal (information, arithmetic, similarities digit span, comprehension, vocabulary) and 5 performance scales (picture arrangement, picture completion, block design, object assembly, digit symbol)
- ▣ The validity and reliability of WAIS are high.
- ▣ Most people (70%) score between 90 and 110.

Genetic and environmental influence

- ▣ The closer the genetic relationship the more similar the tested intelligence.
- ▣ The average correlation:
 - between parents IQ and their children %**50**
 - between parents IQ and adopted children %**25**
 - between Monozygotic twins %**90**
 - between Dizygotic twins %**55**
- ▣ **Environment** does make a difference in intelligence (nutrition health, quality of stimulation, emotional climate, and feedback elicited by behavior).
- ▣ Head start programs (2 – 5 years old from poor homes)
- ▣ Participants scored 10 points higher on WISC than those who didn't participate.

Past Papers:

- 1) which of the following is wrong about intelligence?
 - a- first assessment of intelligence was done by Binet in 1904
 - b- IQ is stable over time
 - c- there are no IQ differences btw races
 - d- education increase intelligence by 30 points in WISC
 - e- >>>there is no correlation btw parents IQ and their children.**

- 2) which of the following is not a well-known form of intelligence?
 - a- mathematical
 - b- >>>recreational**
 - c- musical
 - d- kinaesthetic

- 3) which of the following is not related to individual intelligence?
 - a- uncle's IQ
 - b- quality of stimulation
 - c- emotional climate
 - d- birth order**

- 4) Which of the following is wrong about IQ?
 - a- >>>average correlation btw parents IQ and their children is 80**
 - b- average correlation btw adopted children is 25
 - c- average correlation btw MZ twins is 90
 - d- average correlation btw DZ twins is 55

- 5) Which of the following is true about Wechsler intelligence scale?
 - a- assess the intelligence of children
 - b- contains 9 verbal scales
 - c- contains 3 performance scales
 - d- high validity and low reliability of the test
 - e- >>>most people score btw 90 and 110**

- 6) Wrong about intelligence -> can be increased by 30 points with good education.
- 7) True about intelligence -> more differences are intraracial than interracial.
- 8) Which of the following is irrelevant to the individual IQ?
- a- Uncle's IQ
 - b- Emotional climate
 - c- Quality of stimulation
 - d- Socioeconomic class
 - e- **Marital status. ***
- 9) Wrong about IQ– parent IQ is not related to their offspring's
- 10) The following are the most agreed upon aspects of intelligence except
- a- Verbal skills
 - b- Problem solving
 - c- Adaptation
 - d- Ability to learn
 - e- **Getting rich ***
- 11) The following are Aspects of public personality EXCEPT
- a- The way an individual presents self
 - b- Mannerisms' of the individual
 - c- The way an individual reacts to stress
 - d- General disposition of the individual
 - e- **The individual fantasies about self-***
- 12) All the following are false about intelligence except:
- a- intelligence is the product of stimulation in early childhood
 - b- **IQ was calculated according to mental age over chronological age**
 - c- intelligence continues growing until age of 25
 - d- successful people are not necessarily highly intelligent
 - e- people of are usually low in intelligence
- 13) All the following are true about intelligence except:
- a- Spearman developed the concept of general (g) factor
 - b- most people have average IQ
 - c- 68% of people lie within one standard deviation of IQ curve
 - d- **genes are the only determinant of IQ**
 - e- no difference in IQ among human race