

# What is Intelligence ?

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2007-10-30

Nobody knows what it is but some think intelligence can be measured.

# IQ test

- Intelligence Quotient
- The most influential tradition of intelligence testing
- Alfred Binet
- Lewis Terman
- Stanford-Binet test
- Wechsler Intelligence Scale



Alfred Binet

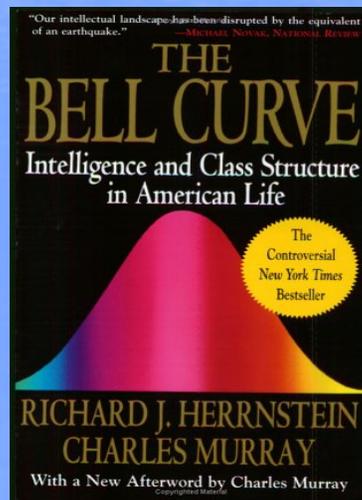
# What is the focus of IQ tests?

- Verbal ability
- Spatial skills
- Reasoning
- Analytical skills
- Reaction time
- Incorporated tests

# A general intelligence factor

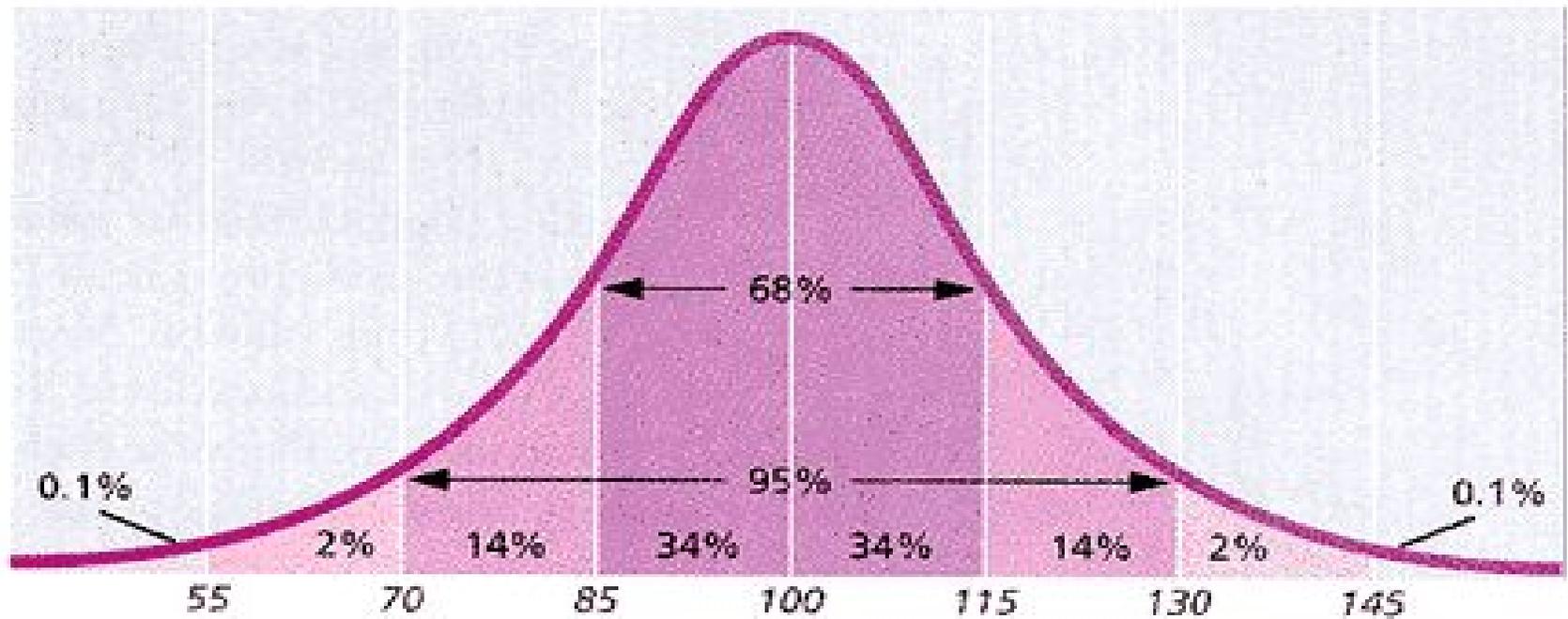
Does the factor  $g$  exist?

And it is no use to say that there is no such thing as  $g$ . While concepts such as "emotional intelligence" and "multiple intelligences" have their uses, a century of psychometric evidence has been augmented over the last decade by a growing body of neuroscientific evidence. Like it or not,  $g$  exists, is grounded in the architecture and neural functioning of the brain, and is the raw material for academic performance. If you do not have a lot of  $g$  when you enter kindergarten, you are never going to have a lot of it. No change in the educational system will change that hard fact.



Charles Murray, author of  
*The Bell Curve:*

## Bell Curve



# Is IQ testing dangerous?

- Labeling of people can cause injustice
- Only a narrow range of abilities are measured
- There are many degrees of intelligence and some of them are believed to develop over time
- External factors, as "test-anxiety"

# Time for some IQ-questions!

1. HAND is to Glove as HEAD is to

- Hair
- Hat
- Neck
- Earring
- Hairpin

2. John likes 400 but not 300; he likes 100 but not 99; he likes 3600 but not 3700.

Which does he like?

- 900
- 1000
- 1100
- 1200

3. A fallacious statement is:

- Disturbing
- Valid
- False
- Necessary

4. If you rearrange the letters "NAMYERG," you would have the name of a(n):
  - Ocean
  - Country
  - State
  - City
  - Animal
  
5. The European Space Agency received three messages in a strange language from a distant planet. The scientists studied the messages and found that "Necor Buldon Slock" means "Danger Rocket Explosion" and "Edwan Mynor Necor" means "Danger Spaceship Fire" and "Buldon Gimilzor Gondor" means "Bad Gas Explosion". What does "Slock" mean?
  - Danger
  - Explosion
  - Nothing
  - Rocket
  - Gas
  
6. If some Wicks are Slicks, and some Slicks are Snicks, then some Wicks are definitely Snicks. The statement is:
  - True
  - False
  - Neither

7. In a race from point X to point Y and back, Jack averages 30 miles per hour to point Y and 10 miles per hour back to point X. Sandy averages 20 miles per hour in both directions. Between Jack and Sandy, who finished first?

- Jack
- Sandy
- They tie
- Neither
- Impossible to tell

8. Ten people can paint 60 houses in 120 days, so five people can paint 30 houses in:

- 15 days
- 30 days
- 60 days
- 120 days

9. A cynic is one who knows the price of everything and the \_\_\_\_\_ of nothing.

- Emotion
- Value
- Meaning
- Color
- Quality

10. Two cars start off at the same point on a straight road facing opposite directions. Each car drives for six miles, takes a left turn, and drives for eight miles. How far apart are the two cars?

- 2 miles
- 11 miles
- 14 miles
- 20 miles
- 26 miles

- <http://uk.tickle.com/test/iq/intro.html>

# Your IQ score is 129 !???

You are equipped with a verbal arsenal that enables you to understand complex issues and communicate on a particularly high level, making you a **Word Warrior**. Your command of words is so powerful that you are also a terrific communicator -- able to **articulate big ideas** to just about anyone.



The power of words translates to fresh ideas off paper too, in both artistic and creative pursuits. This allows you to be a visionary -- to **extrapolate** and come up with a multitude of fresh ideas.

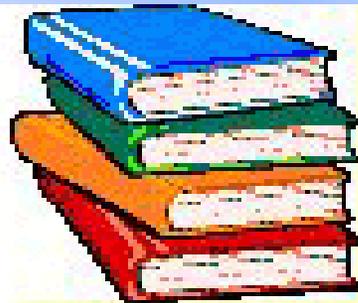
# Multiple Intelligences?

- Intelligence is an ability or set of abilities and skills that allows someone to solve problems or fashion products that are of consequence in a particular cultural setting.
- Intelligence is not fixed.
- Someone excel in one situation but not in another.
- Intelligence develops by learning and can be improved.
- The use of all intelligences leads to well-balanced learning.

# Criteria or 'signs' of an intelligence:

- Potential isolation by brain damage.
- The existence of idiots savants, prodigies and other exceptional individuals.
- An identifiable core operation operation or set of operations.
- A distinctive development history, along with a definable set of 'end-state' performances.
- An evolutionary history and evolutionary plausibility.
- Support from experimental psychological tasks.
- Support from psychometric findings.
- Susceptibility to encoding in a symbol system.

[ Gardner, Howard (1983; 1993) *Frames of Mind: The theory of multiple intelligences*, ]



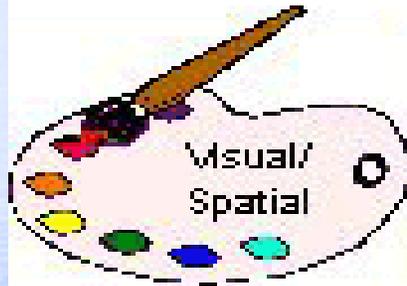
Linguistic/Verbal



Mathematical/  
Logical



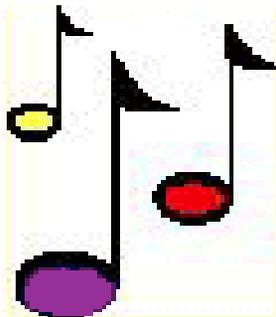
Kinesthetic/Motor



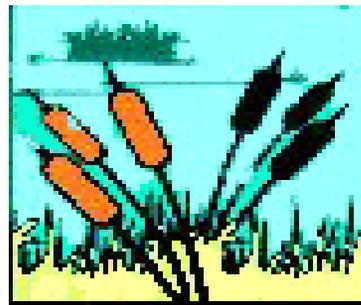
Visual/  
Spatial



Intrapersonal



Musical/  
Rhythmical



Naturalist



Existential/  
Philosophical



Interpersonal

## **1. Linguistic:**

involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals

(verbal arguments, crossword puzzles, riddles, research, poetry, writing, giving instructions)

## **2. Mathematical/Logical:**

consists of the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically

(budgeting, planning, calculations, estimating quantities, time management, math, sciences)

# Howard Gardners intelligences

## 3. **Physical (Bodily-kinesthetic) :**

entails the potential of using one's whole body or parts of the body to solve problems. It is the ability to use mental abilities to coordinate bodily movements.

**(sports, car maintenance, do-it-yourself projects, woodworking, crafts, cooking)**

## 4. **Visual/Spatial:**

involves the potential to recognize and use the patterns of wide space and more confined areas

(map reading/navigation, using diagrams/plans, driving, art, dressmaking, model layouts)

## 5. Musical:

involves skill in the performance, composition, and appreciation of musical patterns. It encompasses the capacity to recognize and compose musical pitches, tones, and rhythms

(playing music, repeating songs, rhythm, recognizing tunes, moving in time to music, remembering slogans&verses)

## **6. Inter-Personal:**

is concerned with the capacity to understand the intentions, motivations and desires of other people. It allows people to work effectively with others

**(listening, committee work, supervising others, parenting, teaching, consoling, training others)**

## **7. Intra-Personal:**

entails the capacity to understand oneself, to appreciate one's feelings, fears and motivations.

(keeping a diary/journal, time management, planning and organization, understanding your emotions, goal setting)

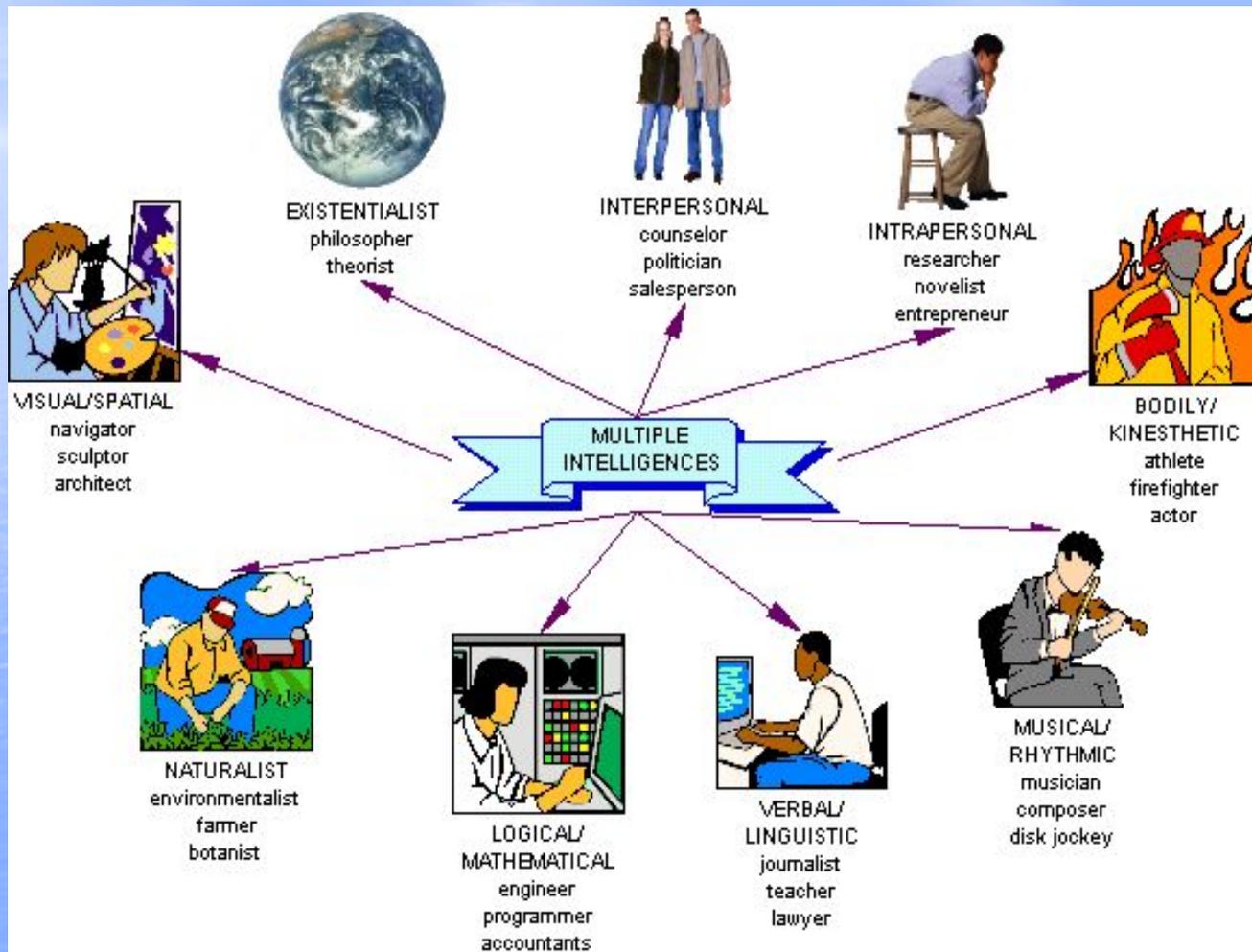
# MULTIPLE INTELLIGENCES



THEORY BY HOWARD GARDNER  
GRAPHIC BY MARK R. KASER  
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# New intelligence candidates?

- **Naturalist intelligence**
  - enables human beings to recognize, categorize and draw upon certain features of the environment
- **Spiritual intelligence**
- **Existential intelligence**
  - an explicit concern with spiritual, religious or existential matters
- **Moral intelligence**



# Learning styles

- ***When you Spell***

1. Do you try to see the word? (V)
2. Do you sound out the word or use a phonetic approach? (A)
3. Do you write the word down to find if it feels right? (K/T)

- ***When you Talk***

1. Talk sparingly but dislike listening for too long?  
Do you favor words such as *see, picture, and imagine?* (V)
2. Do you enjoy listening but are impatient to talk?  
Do you use words such as *hear, tune, and think?*  
(A)
3. Do you gesture and use expressive movements?  
Do you use words such as *feel, touch, and hold?*  
(K/T)

- ***When you Read***

1. Do you like descriptive scenes or pause to imagine the actions? (V)
2. Do you enjoy dialog and conversation or hear the characters talk? (A)
3. Do you prefer action stories or are not a keen reader? (K/T)

- ***When you* Do something new at work**

1. Do you like to see demonstrations, diagrams, slides, or posters? (V)
2. Do you prefer verbal instructions or talking about it with someone else? (A)
3. Do you prefer to jump right in and try it? (K/T)

- ***When you Meet someone again***

1. Do you forget names but remember faces or remember where you met? (V)
2. Do you forget faces but remember names or remember what you talked about? (A)
3. Do you remember best what you did together? (K/T)

# Visual Learners

- take numerous detailed notes
- tend to sit in the front
- are usually neat and clean
- often close their eyes to visualize or remember something
- find something to watch if they are bored
- like to see what they are learning
- benefit from illustrations and presentations that use color
- are attracted to written or spoken language rich in imagery
- prefer stimuli to be isolated from auditory and kinesthetic distraction
- find passive surroundings ideal

# Visual learners have

- a sharp, clear picture of an experience

## Expressions:

- How do you see the situation? What do you see stopping you?
- This looks good.
- Do you see what I am **showing** you?

## Visuals complain:

*"Auditories don't pay attention to them because they don't make eye contact."*

# Auditory Learners

- sit where they can hear but needn't pay attention to what is happening in front
- may not coordinate colors or clothes, but can explain why they are wearing what they are wearing and why
- hum or talk to themselves or others when bored
- acquire knowledge by reading aloud
- remember by verbalizing lessons to themselves (if they don't they have difficulty reading maps or diagrams or handling conceptual assignments like mathematics).

# Auditory learners

- Identify sounds related to an experience

## Expressions:

- How do you **hear** this situation going?
- What do you **hear** that is stopping you?
- Does it **sound** good/heavy?

## Auditories complain:

*"Kinesthetics don't listen."*

# Kinesthetic Learners

- need to be active and take frequent breaks
- speak with their hands and with gestures
- remember what was done, but have difficulty recalling what was said or seen
- find reasons to tinker or move when bored
- rely on what they can directly experience or perform
- activities such as cooking, construction, engineering and art help them perceive and learn
- enjoy field trips and tasks that involve manipulating materials
- sit near the door or someplace else where they can easily get up and move around
- are uncomfortable in classrooms where they lack opportunities for hands-on experience
- communicate by touching and appreciate physically expressed encouragement, such as a pat on the back

# Kinesthetic learners

- Develop a strong feeling towards an experience

Expressions:

- How do you **feel** about this situation?
- I'm **getting a handle** on this material.
- Let's **move** together.
- Does what I am putting you in **touch** with **feel** right?

Kinesthetics complain:

*"Auditory and visual people are insensitive"*

# Processing Suggestions to be discussed in group

- How could knowing your learning style be of benefit to you, personally?
- How can it be helpful in your interactions with others?
- How do you think this could help you in your studies?
- How do you think this could help you in lectures?
- How do you think this could help you in note taking?