University of Babylon, College of Nursing
Course: Psychology for Nurses
Lecture: Intelligence
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Introduction

Definition 1: The 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 taking thought.

Definition2: The ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience.

- Intelligence is a mental capability not a thing
- Intelligence cannot be captured in a single number
- Intelligence enables individuals to act purposefully, think rationally, and deal effectively with the environment
- Thinking refers to how we use our intelligence

Types of Intelligence

1. **Linguistic Intelligence: "word smart"**
   - Capacity to use language, your native language, and perhaps other languages, to express what's on your mind and to understand other people Linguistic Intelligence traits:
   - Linguistic intelligent is the sensitivity to the meanings and sounds of words and mastery of syntax.
2. **Logical-Mathematical Intelligence "number/reasoning smart"**
   - The capacity to reason, calculate, recognize patterns, and handle logical thinking.
   - Understanding of objects and symbols
   - Logical-mathematical Intelligence traits: likes to count, likes to be organized, good at problem solving.
3. **Spatial Intelligence "picture smart"**
   - The ability to represent the outer world internally in your mind.
   - The capacity to perceive the visual world accurately and to perform transformations upon perceptions
   - It is the ability to re-create aspects of visual experience in the absence of physical stimuli
   - Spatial Intelligence Traits: likes art, drawing, sculpting, painting, good at reading maps, thinks in pictures, can visualize or imagine vividly.

4. **Bodily-Kinesthetic Intelligence "body smart"**
    - The capacity to use your whole body or parts of your body: (your hands, your fingers, your arms), in highly skilled ways for expressive or goal-directed purposes (solve a problem, make something, or put on some kind of production).
    - **Bodily-Kinesthetic Intelligence traits**: good sense of balance, good sense of rhythm, is graceful in movements, good hand-eye coordination, can communicate ideas through gesture.
5. **Musical Intelligence "music smart"**
    - Sensitivity to individual tones and phrases of music, an understanding of ways to combine tones and phrases into larger musical rhythms and structures, awareness of emotional aspects of music
    - **Musical Intelligence traits:** sensitive to sound patterns, has a good sense of pitch and rhythm, aware of complex structure of musical notes.
6. **Interpersonal Intelligence "people smart"**
    - Ability to notice and make distinctions among the moods, temperaments, motivations, and intentions of other people and potentially to act on this knowledge.
    - Interpersonal Intelligence traits: good at negotiating, enjoys company, gets on well with others, likes team work, sensitive to the feelings of others.
7. **Intrapersonal Intelligence "self-smart"**
    - The ability to access, understand and communicate one's own inner feelings.
    - ability to draw on one's emotions to guide and understand one's behavior, recognition of personal strengths and weaknesses
    - **Intrapersonal Intelligence traits:** self-knowledge, deeply aware of one's own feelings, good at following instincts, self-motivated.
8. **Naturalist Intelligence "nature smart"**
    - The ability to see patterns in nature and work in natural environment
    - Sensitivity and understanding of plants, animals, and other aspects of nature
    - **Naturalist Intelligence traits:** feels at their best in nature, sensitive to ecology, sensitive to environmental and animal abuse.

Factors Influencing Human Intelligence

1. **Genetics**
    - Heredity provided the physical body to be developed with certain inherent capabilities while environment provides for the maturation and training of the organism.
2. **Human Health and physical development**
    - Physical and mental health is related to one's ability to engage in mental activity to the extent that an individual achieves success.
    - Physical defects such as in complete maturation of brain cells sensory and physical handicaps interfere with observable intelligent behavior.

3. **Gender**
    - Boys and girls tend to be equivalent in most aspects of intelligence.
    - The average IQ scores of boys and girls is virtually identical.
    - Studies have shown no significant differences between male and female.
    - On the average, females seem to be stronger in verbal fluency, in writing, in perceptual speed (starting at age 2)
    - On average, males tend to be stronger in visual-spatial processing, in science, and in mathematical problem solving (starting at age 3).
    - Differences in intelligence are caused partially by environmental conditions.
4. **Schooling (Attending Schools)**
    - Attending school makes individuals more intelligent
    - Children from families of low socioeconomic state and those from families of high socioeconomic state make comparable improvements in school achievement during the school year
    - During summer break?
        - Children from families of low SES have a drop in achievement scores
        - Children from families of high SES have achievement scores that stay constant or rise slightly.

Notes: During the academic year -- schools provide children of all backgrounds with the same stimulating intellectual environment. Over the summer, children from low-SES families are less likely to have the kinds of experiences that would maintain their academic achievement.

Going to school more days of the year --- better for achievement scores. Attending school increases IQ scores and specific academic skills (such as increased mastery of reading and math).

5. **Poverty**
    - The more years children spend in poverty, the lower their IQs tend to be
    -
    - Children from lower economic state homes score 10-15 points below their middle-class age mates on IQ tests.
    - Children from wealthier homes score better on IQ test than children from poorer homes.
    - The greater the gap in wealth in a country the greater the difference in IQ scores.
    - Inadequate diet for long-term period can disrupt brain development.
    - Long-term or short-term inadequate diet at any point in life can impair immediate intellectual functioning

Intelligence Quotient (IQ)

- This measure is used to indicate a child's intelligence comparative to others of the same age.
- IQ tests measure an individual's probable performance in school and similar settings

Frequently used test for IQ: The Wechsler Intelligence Scale

A. Wechsler Intelligence Scale for Children-Third Edition (WISC-III)
- Used with children 6 to 16

B. Wechsler Adult Intelligence Scale-Third Edition (WAIS-III)
- Used with people 17 and older

A. Wechsler Intelligence Scale for Children-Third Edition (WISC-III)
- Each test is made of 12 parts
  - Each part begins with the simplest questions and progresses to increasingly difficult ones
- Performance Scale (6 parts)
  - Spatial and perceptual abilities
  - Measures fluid intelligence
- Verbal Scale (6 parts)
  - General knowledge of the world and skill in using language
  - Measures crystallized intelligence

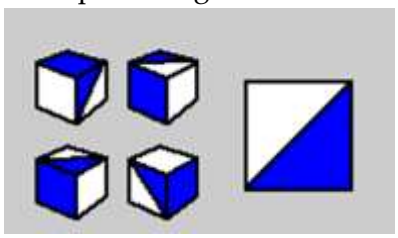
Verbal IQ is based on:

- Information
  - Measures a child's range of factual information
  - Examples:
    1. What day of the year is New Year Day?
    2. How many wings does a bird have?
    3. What is steam made of?
- Similarities
  - Measures a child's ability to categorize
  - Examples:
    1. In what way are wool and cotton alike?
    2. In what way are a lion and a tiger alike?
    3. In what way are a saw and a hammer alike?
- Arithmetic
  - Measures the ability to solve computational math problems
  - Example: If I buy 250 dinars worth of chocolate and give the clerk 1300 dinars. How much I would get back in change?
- Vocabulary
  - Measures the ability to define words

- Example: What does "telephone" mean?

- Comprehension
  - Measures the ability to answer common sense questions
  - Examples:
    1. Why do people buy electrical heater?
    2. What should you do if you see someone forget his book when he leaves a restaurant?
    3. What is the advantage of keeping money in a bank?
- Digit Span
  - Measures short-term auditory memory

Performance IQ is based on:

- Coding
  - Copying marks from a code; visual rote learning
- Picture Completion
  - Telling what's missing in various pictures
  - Example: Children are shown a picture, such as a car with no wheels, and are asked: What part of the picture is missing?
- Picture Arrangement
  - Arranging pictures to tell a story
- Block Design
  - Arranging multi-colored blocks to match printed design
  - Example: Using the four blocks, make one just like this
  - 

- Object Assembly
  - Putting puzzles together - measures nonverbal fluid reasoning
  - Example: If these pieces are put together correctly, they will make something. Go ahead and put them together as quickly as you can.

Note 1: The WISC-III cannot be used to assess infant intelligence

Note2: The Bayley Scales of Infant Development are often used for infant assessment