Module 8.1 What is Intelligence?

Module 8.2 Measuring Intelligence

Module 8.3 Special Children, Special Needs

Psychometric Theories

- Use patterns of test performance as starting point
- Test scores provide evidence for general intelligence (g) and specific intelligences (e.g., perceptual speed, word comprehension)
- Hierarchical theories are a compromise between general and specific theories

Hierarchical View of Intelligence

Sternberg’s Theory

- Analytical ability—involves analyzing problems and figuring out a solution. Logical.
- Creative ability—involves adapting to novel tasks by discovering novel solutions. Artistic.
- Practical ability—involves knowing how solutions and plans actually work. Street Smarts.

Measuring Intelligence:

Summary

- Binet used mental age to distinguish “bright” from “dull” children.
- Led to the Stanford-Binet which gives a single IQ score; average = 100
- WISC, devised in the 1930s, gives verbal and performance IQ scores and a combination of the two scores
- Bayley Scales are used to test infants.
Distribution of IQ Scores

Sample Items from WISC-II

Summary: Do Tests Work?
- Are they reliable? In the short term, yes. In the longer term, less so.
- BUT Infant tests do not reliably predict adult IQ, although scores obtained in childhood do.
- Are they valid? Yes, tests are good predictors of success in school and the workplace, particularly for more complex jobs.
- Validity can be increased with dynamic testing (measures learning potential).

Correlation Between Childhood and Adult IQ

Hereditary and Environmental Factors
- Effects of heredity shown in family studies
- Heredity also influences patterns of intellectual development (twins, adoptees)
- Effects of environment shown in studies of home environments (children with high test scores come from well-organized homes), historical change in IQ scores, and intervention programs

Correlations of IQ for Family Members
Impact of Ethnicity and Socioeconomic Status

• Asian Americans have highest scores followed by European Americans, Hispanic Americans, and African Americans.
• Group differences reduced when compare groups of similar economic status.
• Culture-fair intelligence tests reduce the differences but don’t eliminate them.
• Stereotype threat: knowledge of stereotypes leads to anxiety and reduced performance.
• Test-taking Skill must be considered, too.

Gifted and Creative Children

• Gifted: traditionally refers to someone with scores on intelligence tests of at least 130.
• Exceptional talent must be nurtured.
• Intelligence is associated with convergent thinking (arriving at one, correct answer).
• Creativity is associated with divergent thinking (aim is novel lines of thought).
• -but must be good.
• Differences between Mozart and Salieri.

Children with Mental Retardation

• Mental retardation: substantially below average intelligence.
• Organic mental retardation: retardation caused by a specific biological or physical problem, only about 25% of the cases, usually more severe.
• Familial mental retardation: represents the lower end of the normal distribution of intelligence.

Levels of Mental Retardation

- AAAH
- IQ Level
- IQ Scores
- Profound
- Severely
- Moderate
- Mild

Children with Learning Disabilities

• Children with learning disabilities have normal intelligence, but have difficulty mastering academic material, and have no other explanation.
• Many different learning disabilities so difficult to diagnose and many different treatments.