INTELLIGENCE AND TESTING

Intelligence: 1: global capacity to act purposefully, think rationally, and deal effectively with the envt. 2: goal-directed adaptive bx

Aptitude vs. achievement: potential vs. knowledge

Quality control in tests

Reliability: Dependability of measurement (test-retest, alternate form, internal consistency, interrater)
Validity: Measures what it should measure (construct, predictive, concurrent, content, face)
Standardization: test conditions are the same for all
Normed data: Means of comparing scores for test takers

History of IQ Tests

Galton: Energy (capacity for labor) and Sensitivity to physical stimuli
Cattell: Dx 50 psychophysical tests to measure intelligence (Dynamometer, rate of hand mvmt, pin prick threshold…)
Binet: commissioned by the Minister of Public Instruction in Paris wanted to find a test to differentiate the "defective" children. Bneleived intelligence = judgement. Worked with Simon.
Stern: Ratio IQ. Mental age/Chronological age x 100.

Stanford-Binet IQ Test: Binet's intelligence test rewritten into English, used ratio IQ not just mental age:
Weschler scales: Verbal Score and Performance score. Test for adults, children, and preschool age
SAT: should test for Aptitude and achievement

Theories of Intelligence

G Factor (Spearman): used factor analysis. G factor and S factors.
Primary Mental Abilities (Thurstone): 7 equally impt factors
Hierarchical (Cattell): Fluid (new relations or knowledge) vs Crystallized (acquired knowledge) intelligence
Simple IP: Higher intelligence = lower inspection time
Complex IP: Higher IQ = Take longer during global planning , and less during local planning
Electrophysiological: Higher intelligence - greater speed and efficiency of neural processing
Metabolic: Higher intelligence - reduced levels of glucose metabolism overall and more localized metabolism
Cultural-Relativist (Berry): Assessments and even descriptions of intelligence should be based solely on indigenous notions
Multiple Intelligences (Gardner): 8 distinct intelligences that are somewhat independent, but may work together
Triarchic Theory of Intelligence (Sternberg): three aspects – analytic, creative, practical

Heredity and envt with intelligence
Flynn Effect
Growth Mindset
Stereotype Threat
Emotional Intelligence

Intellectual Disabilities

Levels: Mild, moderate, Severe, profound
Causes: Familial or organic
PKU: Genetic disease - lack of enzyme causing phenylpyruvic acid to collect in the body
Microcephaly: "Small-headedness" due to skull that is too small and doesn't grow
Hydrocephaly: buildup of CSF within brain ventricles. Pressure causes head to swell
Congenital Hypothyroidism: Insufficient supply of thyroid hormone
Down Syndrome: Genetic - extra copy of 21st chromosome
Fragile X: Genetic - thin area on X (female) chromosome

Giftedness

IQ Range: IQ score above 130
Terman's Study: "the termites". Longitudinal Study
Savants: Gifted with a special talent (not traditional intelligence)