Week 3 – Individual Differences and Assessment – Theories of Intelligence

LOOK AT WEEK 3 TUTORIAL ACTIVITITY

Definitions of Intelligence

Sir Francis Galton (1869): genetic predisposition – nature vs. nurture.

Alfred Binet & Theophile Simon (1905): created first modern intelligence test that separated developmentally disabled from normal school children. Saw intelligence as a global process and that individuals differed widely in this global capacity.

L. M. Terman (1921): revised the original Binet and produced the Stanford Binet Intelligence Scale. Introduced IQ [Intellectual Quotient] by dividing mental age by chronological age and multiplying by 100. Intelligence is the ability to carry on abstract thinking.

Charles Spearman (1927): Introduced the *g* factor of intelligence [General Intelligence] through methods of *factor analysis* to determine degrees of correlation between performances on various tasks.

Louis Thurstone (1938): using factor analysis, concluded that there was no general intelligence factor (*g*) but that there are 7 factors

1) Reasoning
2) Word fluency
3) Perceptual speed
4) Word comprehension
5) Spatial visualization
6) Numerical calculation
7) Associative memory

B. F. Skinner (1953): Intelligence is defined by behaviour

David Wechsler (1953): global capacity of the individual to act purposefully, think rationally and deal effectively with environment. *Combined verbal and non-verbal/performance subtests*

Raymond Cattell (1963, 1971): Described intelligence as Fluid abilities (ability to see complex relationships and solve problems. Measured by tests using unusual or novel objects/problems that are new to each person who takes the test, therefore previously acquired knowledge [crystallized intelligence] cannot help) and Crystallized abilities (the knowledge a person has already acquired and ability to access that knowledge, involves culture. Measured by vocabulary, arithmetic and general information tests).

J. P. Guilford (1967): believe many factors are involved in intelligence and introduced the *Structure of intellect Model.* It involves 3 dimensions; Operations (type of mental activity performed) , Products (form in which information is presented) and Content (type of information).

Hunt (1990): General reasoning ability, domain-specific skills and information processing.

Feuerstein (1979, 1980): theory of *Structural Cognitive Modifiability* – intelligence is a function of experience and can be changed through guidance of another human being. Dynamic tests that focus on childs potential to improve learning. Role of the learner is to provide *Mediated Learning Experience* (MLE)

MAIN THEORISTS

Howard Gardner (1983, 1999): Cultural and biological basis. Focus on cognitive competence. Everyone possesses each of these skills, however varies in the DEGREE of skill and HOW we combine them. Theory of Multiple Intelligences and Emotional Intelligence. Emphasized that numerous intelligences cover a range of human experiences that differs across human societies (western/non-western). Involves 8 intelligences:

1) Logical-mathematical
2) Linguistic
3) Naturalist
4) Musical
5) Spatial
6) Bodily kinaesthetic
7) Interpersonal
8) Intrapersonal

Emotional intelligence (EQ) (intertwines with Gardners *Interpersonal* and *Intrapersonal* components of intelligence) involves 4 major components;

1) Ability to perceive, appraise and express emotions accurately and appropriately
2) Ability to use emotions to facilitate thinking
3) Ability to understand and analyse emotions and use emotional knowledge effectively
4) Ability to regulate one's emotions to promote emotional and intellectual growth

Robert Sternberg (1999): Intellectual and thinking skills are INSEPERABLE. *Triarchic Theory of Intelligence* involving 3 components. Different ways of characterizing effective performance.

1) Analytical/Compenential Intelligence (Knowledge acquisition component: learn new facts. Performance component: problem solving strategies/techniques. Metacognitive components: plan, manage and evaluate strategies)
2) Creative/Experiential Intelligence (ability to deal with novel tasks that demand creative responses)
3) Practical/Contextual Intelligence (management of day-to-day fairs via 3 steps: 1] *Adapt* to new and different environments 2] *Select* appropriate contexts 3] *Shape* environment to suit your needs)

MAIN THEORISTS

Perkins (1995): theory of Learnable Intelligence. Thinking frames and Enculturation Mindware. Intelligence is composed of a *Neutral, Experiential* and *Reflective* Intelligence.

Goleman (1995): Theory of *Emotional Intelligence*, composed of Cognitive, Psychological OR Emotional and Moral realms (inner character, empathy, respect)

Heredity and IQ

The greater genetic similarilty, the greater IQ similarity. This is found through *Heritability Estimate*. Heritability increases across the lifespan: 40% 4-6 yrs, 60% early adulthood, 80% older adults. Environment also has an impact.

Identical twins (monozygotic), Fraternal twins (dizygotic)

Culture and validity of IQ tests

Coolabah Dynamic Assessment Method: aims to meet the needs of gifted aboriginal students and those from non-English-speaking backgrounds.

Environments and the IQ

Home environmental Influences:

- *Shared* (affect all siblings similarity)
  -Family beliefs about intellectual success
- *Non-Shared* (create differences between siblings)
  -Birth order
  -Spacing
  -Sibling relationship
  -Parental favourites
  -Assigned roles
  -Different impact of family events
  -Influences away from home