

Mental abilities lecture notes

Describe and explain what is meant by mental abilities and intelligence.
Describe what is meant by 'construct' and explain the distinction between latent and manifest variables.
Describe what is meant by implicit theories of intelligence and explain the difference between entity and incremental theories.
Describe key findings related to entity and incremental theories and cultural differences.

Introduction

What Are Mental Abilities? *Mental abilities refer to what you can do with your mind - your capacity to perform higher cognitive functions such as reasoning, remembering, understanding, and problem solving*

Commonly referred to as cognitive abilities or intelligence

Examples: Savant Syndrome

Kim Peek: Born with an absent corpus callosum, low IQ (87), but an extraordinary memory (could recall ~98% of what he read) and calendar calculation ability → had 'photographic memory'

Jason Padgett: After a traumatic brain injury in 2002, developed acquired savant syndrome - suddenly capable of visualising mathematical and physical patterns despite no prior training

These cases show that mental ability varies widely across individuals + Damage or developmental differences can enhance or impair cognitive functioning

Intellectual Disability

- ~1.8% of Australians have an intellectual disability
- Average life expectancy is 27 years lower than the general population
- Categorised under Neurodevelopmental and Neurocognitive Disorders in the DSM-5-TR

What Is Intelligence? *A general mental capability involving the ability to Reason, Plan, Solve problems, Think abstractly, Comprehend complex ideas, Learn quickly and from experience*

- "It is not merely book learning or test-taking smarts, but a broader capability for comprehending our surroundings - 'catching on', 'making sense', or 'figuring out what to do.'" (Gottfredson, 1997)

Key Concepts

- Intelligence allows humans to adapt to and survive within complex environments
- Involves abstract thinking: imagining hypothetical or non-concrete situations and forming concepts (e.g. justice, freedom)
- Intelligence extends beyond academic success - can include emotional or practical intelligence

Why Study Intelligence?

1. To understand how the mind works and what people can do
2. To support individuals with developmental or acquired cognitive impairments
3. To evaluate how the environment (e.g. education, upbringing) influences cognitive development
4. To help with selecting the right people for positions (e.g. selective schools, for jobs etc.)

Constructs: Latent vs manifest variables

What Is a Construct? A theoretical idea that we create ("construct") to explain observable phenomena

- In psychology, constructs help us make sense of abstract qualities we cannot directly observe (e.g. intelligence, motivation, anxiety)

Intelligence is an explanatory construct - a concept invented to explain why some people perform better than others on cognitive tasks

Latent Variables ⇒ Latent = hidden - we can't see them

- These are underlying theoretical constructs that cannot be measured directly but are inferred from observable data
- Example: Intelligence is latent - we cannot see it directly, but we infer it from how people perform on tasks

Manifest Variables ⇒ Manifest = In the open - visible/observable

- These are measurable indicators used to draw conclusions about latent variables - It provides the data used to infer latent variables
- Example: Test scores or reaction times are manifest variables that provide evidence of underlying intelligence

Operationalising Constructs

- To operationalise a construct means defining how to measure it in practice
- E.g. Operationalising “intelligence” → creating a test that quantifies reasoning, problem-solving etc.
- Requires a sound theory of intelligence to guide what is being measured

So, what are our theories of intelligence?

Implicit Theories of Intelligence - *Everyday beliefs people hold about intelligence - usually intuitive, not research-based*

- These beliefs influence motivation, learning, and how people interpret success and failure
- Examples: “Smart people are born that way”, “Anyone can get smarter with effort”

Two Major Implicit Theories

1. Entity Theory → Intelligence is a fixed trait/‘entity’ - you’re born with a set level of intelligence that cannot change much
2. Incremental Theory → Intelligence is malleable - abilities can be improved through effort, education etc.

Why Do These Beliefs Matter? Your beliefs about intelligence can shape motivation, effort, and responses to failure

Research Evidence

Blackwell et al. (2007)

Study of 7th graders (n = 373) followed over 2 years

Students with incremental beliefs showed: Upward trajectory in academic performance (math grades), Greater persistence and effort, More positive responses to failure

Those with entity beliefs showed Little to no improvement in grades + Less motivation after failure

Interpretation: Believing intelligence can grow → fosters motivation and resilience

Costa & Faria (2018): Culture matters → meta-analysis of implicit theories & performance (46 studies; 412,022 students)

- **Asia & Oceania:** Incremental beliefs (intelligence can grow) had a positive link with achievement
- **Europe:** Entity beliefs (intelligence is fixed) had a positive link with achievement
- **North America:** Entity beliefs had a negative link with achievement
- Hence → cultural context influences how beliefs about intelligence affect motivation and performance

Describe Binet’s approach and contributions to the development of intelligence testing.

Describe and explain what is meant by 'mental age'.

Compare and contrast the key features of Binet’s approach with the UK/US approach to intelligence testing.

Describe the mixed legacy of early intelligence testing and its impact on contemporary Psychology and society.

Origins of Intelligence Testing

Origins of Intelligence Testing (France)

HISTORICAL CONTEXT

- Late 19th-early 20th century France → concern over children struggling in school