

PSYC3302 Lecture notes

Lecture one

Unit about:

- Psychological measurement

Labs

- 11 labs

Major assessment- Lab report

- Create measurement tool
- E.g., addiction to social media
- Handing in individual assignment
- APA

Lab exam

- SPSS workshops will prepare for them
- Data file & series of questions.

Theory exam

- Based on learning objectives
- Lecture and labs

Learning Objectives- Lecture 1

- History of psychometrics and psychological measurement
- Critical role of psychological measurement
- Fundamental principles of psychological tests
 - o What is a construct
 - o What is a test
 - o Types of tests
- Scaling
 - o Identity, order, quantity, the number 0
 - o Nominal, ordinal, interval and ratio scales.

Psychometrics

- Relevant to all aspects of psychology, both practical and theory.
- Psychometrics: the science concerned with evaluating the attributes of psychological tests.
- Began with Francis Galton: who wanted to measure everything. 'Everything can be measured/assessed'

Intelligence

- Measuring intelligence is how psychometrics started
- Alfred Binet asked to do something with orphans of Paris
- Which ones were "worth helping"?
- Before this clinicians were basing intelligence based on judgement but had no assessment.
- Binet wanted to add a series of tests, which involved units of intelligence and separated people based on abilities and started to show individual differences.
- He discovered mental age, the first non-psychophysical measure in psych.
 - o The mental and chronological age do not necessarily align.
 - o Mental age worked out by giving a test and how many they get right or wrong and the performance of other children their age, which can help to work out how old they are.

Psychological measurement plays 3 critical roles:

- Decide which test to use in a given situation
- Interpret the scores from a test in a given situation
- Possibly create your own test for a given situation

If you misapply a test or misinterpret the scores, you run the risk of harming people.

Deciding on a test

- There are many on the market
- Which one will you use? Which are good?
- To do so, must understand the fundamental aspects of psychometrics: reliability, validity, norms and test discrimination.

Interpreting test scores

- Role of clinician
- Relies on the score transformation that test developers use
- Often, percentiles.
- But can also be normalised transformed scores. E.g., IQ score Mean=100 & SD=15.

Creating a test

- Tests may not be of good quality
- Sometimes no test may exist that measures the psychological attribute you're interested in.
- Therefore, you may create a test for your own needs
 - o People in research do this often

Unobservable psychological attributes

- Many types of measurement are relatively straightforward.
- In psychology, the attribute of interest is often not observable directly.
- Instead, psychologists rely upon a collection of several overt behaviours as *indirect indicators* of the attribute of interest.
- We are introducing error- we can never pin point to one brain process. This is why we measure the effect of neurological process, behaviour.
- The level of indirectness varies on scale from psychophysics (e.g., EEG) and attitudes & personality (distal indicators). Abilities in the middle of these two aspects.

E.g., Working Memory

- There is no single test but sub-tests
- It is difficult and introduces a lot of room for error.

Constructs

- Otherwise known as psychological construct.
- **Psychological construct:** an unobservable hypothetical entity that is used to represent a pattern of psychologically related phenomena.
- They are abstract.
- There is no single test that can prove the existence of any construct.
- Instead researchers rely on a collection of observations to help support the "existence" of a construct.
- In psychometrics, 'construct validity' rather than existence
- Some are associated with a substantial amount of construct validity e.g., depression and anxiety, while others are not e.g., Freudian penis envy.

Theory and operational definitions

- Nailing construct to a very specific construct of interest.
- When the construct is defined clearly, one can dismiss obviously irrelevant indicators/information of the construct of interest
- Psychological constructs are not observable directly.
- Constructs tend to be both abstract and general. Does not include long jump distance.

Psychological test: a systematic procedure for comparing the behaviour of two or more people.

3 Important components to this definition

- 1- Tests all involve a **behavioural sample** of some kind