

MPSW5013/ PPSW6013 RESEARCH METHODOLOGY

Research Management & Ethics

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Lesson Outcome

Upon completion of this lesson, students should be able to:

- identify scientific canons in research (validity/reliability)
- determine ways in managing resources and working with supervisors.
- determine ethical considerations in research.
- determine plagiarism matters.

Overview

- Scientific Canons in Research (Reliability/Validity)
- Working with supervisor
- Ethical considerations
- Plagiarism & tools

Reliability and Validity

- Definition of Terms
- Types of Validity
- Threats to Validity
- Types of Reliability
- Threats to Reliability
- Introduction to Measurement Error.

Commonly used terms...

“She has a valid point”

“My car is unreliable”

...in science...

“The conclusion of the study was not valid”

“The findings of the study were not reliable”.

Some definitions...

- Validity

“The soundness or appropriateness of a test or instrument in measuring what it is designed to measure”

(Vincent 1999)

Some definitions...

Validity

“Degree to which a test or instrument measures what it purports to measure”

(Thomas & Nelson 1996)

Definition

- Reliability

“...the degree to which a test or measure produces the same scores when applied in the same circumstances...”

(Nelson 1997)

Definition

- Objectivity

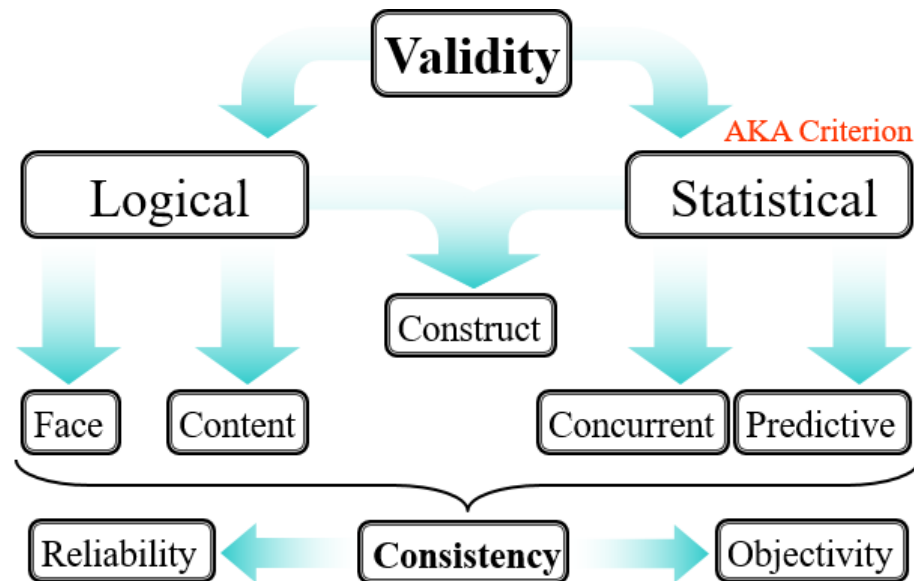
“...the degree to which different observers agree on measurements...”

(Atkinson & Nevill 1998)

Types of Experimental Validity

- Internal
 - Is the experimenter measuring the effect of the independent variable on the dependent variable?
- External
 - Can the results be generalised to the wider population?

Validity



Face Validity

- Infers that a test is valid by definition
- It is clear that the test measures what it is supposed to

i.e.

Would assessing 15 m sprint
time be a valid means of
assessing reaction time?

Assessing face validity is therefore a subjective process

Content Validity

- Infers that the test measures all aspects contributing to the variable of interest

e.g.

Who is the most physically fit?

- VO_2 max test?
- Wingate test?
- 1 RM?

Overall

A logically valid test simply appears to measure the right variable in its entirety?

Statistical Validity

➤ Concurrent Validity

- Infers that the test produces similar results to a previously validated test

Statistical validity

- Predictive Validity
 - Infers that the test provides a valid reflection of future performance using a similar test

Statistical validity

Overall:

A statistically valid test produces results that agree with other similar tests?

➤ Construct Validity

- Infers not only that the test is measuring what it is supposed to, but also that it is capable of detecting what *should* exist, theoretically
- Therefore relates to hypothetical or intangible constructs

Reliability

- Reliability is a pre-requisite of validity

e.g. Direct versus Indirect measures of VO_2 max

Rater Reliability

- The consistency of a given measurement from more than one observer or measurement tool

Working with supervisors

- Consider the relationship as a LONG-TERM, PROFESSIONAL one.
- Build trust – *be honest*
- Build confidence
- Build a good, working relationship
- Keep promises
- Share information
- Clarify expectations

Managing your Supervisor

What they expect from you:

- Show initiative, be proactive etc. basically be independent – these are key to doing PhD research
- Be honest about how things are going
- Produce quality written work consistently
- Meet deadlines (or explain why not)
- Meet regularly to discuss your progress
- Be keen & enthusiastic
- Listen to their advice. **
- Tell them what you are learning
- Teach them something new

What to expect from your Supervisor

- Regular, constructive criticism on your written work
- Guidance, suggestions and ideas for research direction/opportunities
- Advice at each stage of the project
- Support
- Some (though probably not too much!) direction

Research Ethics

- **Ethics** is both a subject area and a body of knowledge concerned with the acquisition of moral awareness and an understanding of the rules and principles which allow an individual or body to exercise moral judgement over its' activities. Ethics is about the personal and public judgement as to what is desirable and undesirable, right and wrong and what we 'ought' and 'ought not' to do in areas that a contested. Ethical management therefore tends to be more devolved with style varied according to sector and purpose.

Plagiarism

Giving Credit Where Credit
is Due!

Plagiarism

It does not matter if the person whose work you have cited is alive or dead. If it is not your own idea, you must cite your source!

If you translate or paraphrase something, you must still give a citation.

If you use a picture from the Internet, you must cite the source.

Three strategies

- Quoting
- Paraphrasing
- Summarizing

To blend source materials in with your own, making sure your own voice is heard.

Quoting

**Quotations are the exact words of an author, copied directly from a source, word for word.
Quotations must be cited!**

Use quotations when:

- You want to add the power of an author's words to support your argument
- You want to disagree with an author's argument
- You want to highlight particularly eloquent or powerful phrases or passages
- You are comparing and contrasting specific points of view
- You want to note the important research that precedes your own

Paraphrasing

Paraphrasing means rephrasing the words of an author, putting his/her thoughts in your own words. When you paraphrase, you rework the source's ideas, words, phrases, and sentence structures with your own. Like quotations, paraphrased material must be followed with in-text documentation and cited on your Works-Cited page.

Paraphrase when:

- You plan to use information on your note cards and wish to avoid plagiarizing
- You want to avoid overusing quotations
- You want to use your own voice to present information

Paraphrasing

Examples:

Source: Unless steps are taken to provide a predictable and stable energy supply in the face of growing demand, the nation may be in danger of sudden power losses or even extended blackouts, thus damaging our industrial and information-based economies. – John Doe, 1999, p.231.

Inadequate paraphrase: Doe (1999) recommends that the government take action to provide a predictable and stable energy supply because of constantly growing demand. Otherwise, we may be in danger of losing power or even experiencing extended blackouts. These circumstances could damage our industrial and information-based economy. (p.231).

The inadequate paraphrase is guilty of plagiarism even though the material is cited correctly. The writer has used too many word-for-word phrases from the source. Also, the order of the ideas is unchanged from the source.

Compare the following correct paraphrase:

Doe (1999) believes that we must find a more reliable source of energy if we are to have a dependable electricity supply. Without this, the nation's economic base may be damaged by blackouts (p.231).

Using Sources Effectively: Strengthening Your Writing and Avoiding Plagiarism. Robert A. Harris. Los Angeles, California: Pyczak Publishers, 2002.

Summarizing

- **Summarizing involves putting the main idea(s) of one or several writers into your own words, including only the main point(s). Summaries are significantly shorter than the original and take a broad overview of the source material. Again, it is necessary to attribute summarized ideas to their original sources.**

Summarize when:

- You want to establish background or offer an overview of a topic
- You want to describe knowledge (from several sources) about a topic
- You want to determine the main ideas of a single source

Plagiarism Detection Tools

➤ Turn it in