



What Does One (Not) Learn From Research Methods Textbooks?

Brian Haig
University of Canterbury

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Introduction

- Thomas Kuhn (1970) argued that textbooks tend to present an uncritical approach to their subject matter.
- In doing so, textbooks contribute in a major way to the dogmatic initiation of learners into established research traditions.
- Psychology's research methods textbooks are largely uncritical in the presentation of their subject matter.
- It follows that they cannot be a source for a genuine education in research methods.
- I identify a number of deficiencies in psychology's general research methods textbooks that need to be remedied.

The Neglect of Methodology

- ❖ The basic limitation of textbooks on research methods is that *the methods dealt with are not informed by their accompanying methodology*. This results in an impoverished understanding of the methods.
- ❖ Methodology is the interdisciplinary field that studies methods. It draws from the disciplines of philosophy of science and cognitive science, amongst others.
- ❖ Methodology describes relevant methods and explains how they reach their goals, it critically evaluates methods against their rivals, and it recommends what methods we should adopt to reach our chosen goals (Nickles, 1987).

Example: Null Hypothesis Significance Testing

- ❖ Psychologists have a poor understanding of NHST.
- ❖ Textbooks unwittingly present an inchoate amalgam of the Fisherian and Neyman-Pearson schools of thought . This virtually guarantees conceptual confusion by the learner (Gigerenzer, 2004).
- ❖ Alternatives to NHST, such as Bayesian statistical inference, are not presented.
- ❖ Researchers in psychology mistakenly take NHST beyond its proper concern with sampling uncertainty and use it to test substantive hypotheses and theories.

The Disregard of Scientific Method

- ❖ Ironically, textbooks give little attention to the topic of scientific method itself, despite its centrality in science (Blachowicz, 2009).
- ❖ Textbooks should give due regard to prominent accounts of scientific method, such as inductive, hypothetico-deductive, and abductive methods.
- ❖ Knowledge of these methods would help learners understand the process of phenomena detection, the complexities of theory testing, and the nature of explanatory reasoning in science.

A Narrow View of Data Analysis

- ❖ Psychology textbooks concentrate on confirmatory data analysis at the expense of exploratory data analysis (Tukey, 1980). Both are important, and exploratory data analysis is needed to help detect potentially interesting patterns in data.
- ❖ Initial data analysis, exploratory data analysis, and computer intensive resampling methods, such as the bootstrap, all deserve inclusion in textbooks.
- ❖ Relatedly, the strategies of close and constructive replication should be emphasized as well.
- ❖ Methods textbooks are poor at dealing with research strategies.

The De-emphasis on Theory Construction

- Methods textbooks in psychology emphasize data analysis at the expense of theory construction.
- At best textbook treatments of theory construction focus on hypothetico-deductive theory testing for empirical adequacy.
- Methods specifically tailored to theory generation (e.g., exploratory factor analysis), theory development (e.g., analogical modelling), and theory appraisal (e.g., inference to the best explanation) all deserve a place in methods textbooks (Haig, 2005).

References

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