



THE CAMPBELL COLLABORATION

What helps? What harms? Based on what evidence?

Evidence-based pedagogy

Eamonn Noonan, CEO

Decade of the Mind Conference
Berlin, 11 September 2009



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Evidence-based pedagogy

”That would be a good idea!”

THE END



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What helps? What harms? Based on what evidence?

How can we develop evidence-based pedagogy?

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The Campbell Collaboration

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Keys to the medical revolution

1. Professional, science-based training
2. More and better research
3. Close links between research and practice
4. Systematic record keeping
5. Systems for making research accessible
6. Technological change

International Secretariat

www.campbellcollaboration.org



How goes the *education* revolution?

- | | |
|--|------------------------|
| 1. Professional, science-based training | Yes |
| 2. More and better research | Could do better |
| 3. Close links between research and practice | No |
| 4. Systematic record keeping | Could do better |
| 5. Systems for making research accessible | No |
| 6. Technological change | Underway |



Progress backwards

Which of the following explain(s) the physiological relationships between qi and blood/xue?

- A: Qi is the source of all material in the body and blood carries the energy
- B: Blood is the source of all material in the body including Qi
- C: Qi drives blood moving and blood carries Qi
- D: Qi flows in the channels and blood is stored in organs
- E: Qi produce blood and blood is the mother of Qi

Exam paper, Traditional Chinese Medicine, Salford University



An experimental approach

... modern nations should be ready for an experimental approach to social reform, an approach in which we try out new programs designed to cure specific problems, in which we learn whether or not these programs are effective, and in which we retain, imitate, modify or discard them on the basis of their effectiveness on the multiple imperfect criteria available.

Donald T. Campbell



Scientific method

- Define the question
- Gather information and resources (observe)
- Form hypothesis
- Perform experiment and collect data
- Analyze data
- Interpret data and draw conclusions that serve as a starting point for new hypothesis
- Publish results
- Retest (frequently done by other scientists)



Little signal, much noise

- A tsunami of academic publications
- A bottomless well of resources on the Internet
 - What can you trust?
 - What is out of date?
 - Do individual studies only show a part of the story?
- It can be dangerous to rely on individual studies
 - Play of chance
 - Vested interests
 - Researcher's preconceptions

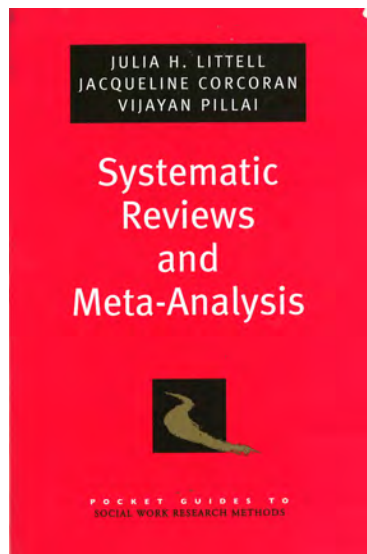


Advantages of a systematic review

- A method for consolidating and interpreting large amounts of research and data
- A method for identifying, evaluating and synthesising all relevant primary studies
- A method to minimise and correct for bias
- A method to establish what works and what harms
- A method to reveal gaps in the evidence



More on Systematic Reviews and Meta-analysis



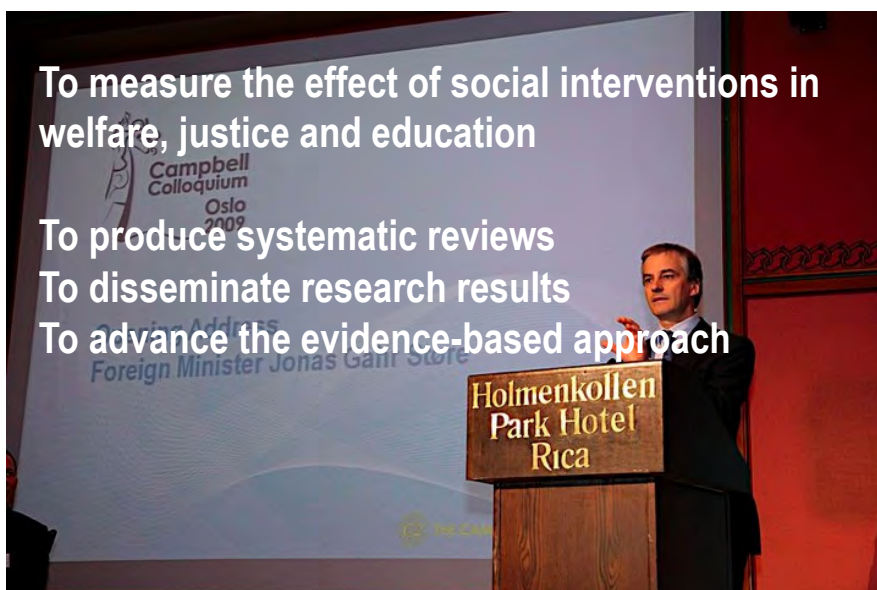
Goals of the Campbell Collaboration

To measure the effect of social interventions in welfare, justice and education

To produce systematic reviews

To disseminate research results

To advance the evidence-based approach





Current debates on systematic reviews

- Inclusion criteria: RCT / QED / observational studies
 - There needs to be a scientific comparison
- Grading of individual studies and of reviews
 - well supported by evidence; contradicted by evidence; promising evidence; evidence is absent ...
- Economic aspects: can cost data be integrated?
- Crossover from the policy debate to political debate
 - "MST does not have a positive effect compared with standard treatment" *versus* "MST should not be used."
- How to handle excluded studies



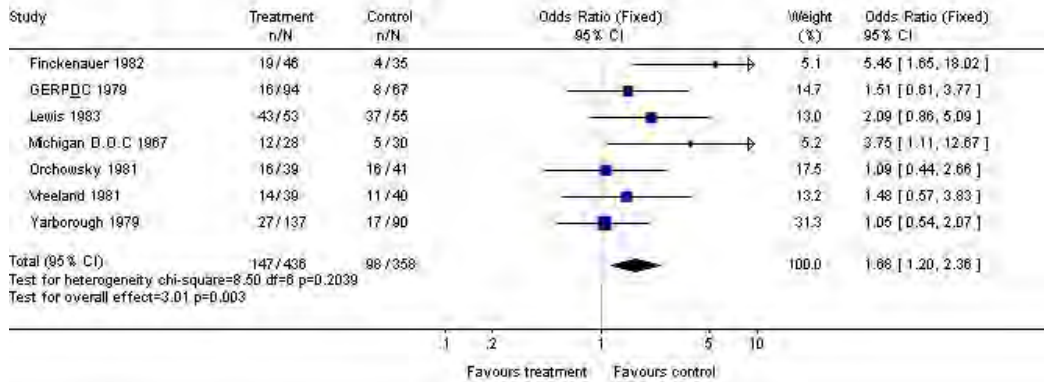
Randomised and non-randomised studies

- Health RCTs: 500 000 references in the Cochrane Library
- The number doubled each decade since the 1970s
- Criminology RCTs: 85 in the period 1982-2004
- 54% of Campbell reviews include studies which are not RCTs
- From hierarchy of evidence to "Fitness for purpose"



"Scared Straight"

Review: "Scared Straight" and other juvenile awareness programs for preventing juvenile delinquency
Comparison: 01 Intervention versus Control, Crime Outcome
Outcome: 01 Post-intervention - group recidivism rates - official measures only (fixed effects)



Steps to an evidence-based approach

- Improve knowledge translation
- Address scepticism about statistics
- Tackle vested interests
- Improving the planning of research and evaluation



A manifesto

It is possible to compile better evidence;
better evidence makes for better decisions;
the process of sifting evidence also uncovers information that
contributes to better programme implementation;
better decisions and better implementation
lead to better policies;
and this helps towards improving people's lives.



**Knowledge and comprehension are
the joy and justification of humanity**

Alexander von Humboldt

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