Evidence-based practice

If a client asks about it, what does it mean for you?

› not just what but how

The evidence-based movement focuses on the methods of evaluation - assessing the findings of an experiment by looking at how it was conducted. Some of the key terms are:

- **RANDOMISATION** - Objects of the study (eg. people, sites) are chosen randomly to avoid bias in the selection process which in turn may influence the outcome.
- **CONTROL GROUP** - Use of untreated study sample as a comparison to the treated sample. Allows for changes in outside factors that may have influenced the outcome to be taken into account.
- **META-ANALYSIS** - Assessment of all studies that can be located on a particular topic (known as a systematic review) and incorporating a ranking of the strength of the studies based on criteria such as use of randomisation and controls and sizes of sample groups.

So the methodology employed in a study gives information on the 'evidence base' it supplies:

- systematic review/meta analysis = stronger evidence
- randomised experiment = minimum level serious evidence
- some weight given to controlled studies minus randomisation
- before and after studies minus controls of little interest

› so if a client approaches your library...

- **NOT A PROBLEM** - if you are in a field such as medicine where the evidence-based movement is well established and indexing of research methodology is commonplace (if this is you, go to SPREAD THE WORD at right)
- **QUITE A PROBLEM** - if you are in other fields

PROBLEM A - The extent of a client's knowledge.
They have been to a seminar, heard the phrase "evidence-based" mentioned and now want to see how it applies to their field of interest - this may be anything from water filtration schemes to crime prevention programs. The client doesn't know about levels of evidence, randomisation and controls - does the librarian?

PROBLEM B - Red herrings.
With the spread of the evidence-based movement has come widespread ambiguity of the term itself. An evidence-based label may mean a randomised experiment (hopefully) or (more likely outside medicine) an evaluation of any sort which has been published and therefore is now an "evidence-base". A search for evidence-based material in many fields without basic knowledge of levels of methodology is asking for trouble.

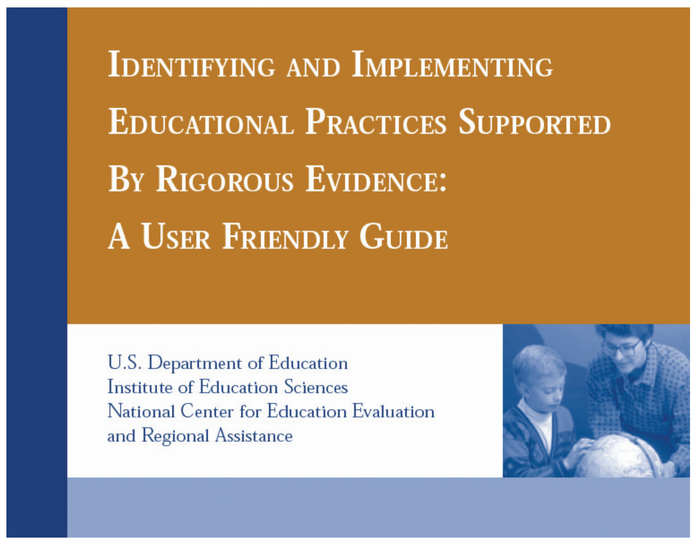
PROBLEM C - Searching limitations.
Even if you know what you are looking for, and what the client wants, the tools you turn to may not be very helpful:

- **Library catalogue** - no help if methods, as well as topic, have not been recorded
- **Citation databases** - may assist for more recent material where abstract mentions experiment methods but not for earlier items where methodology is not stressed in the introduction. Material decades old can be quite important if methods are of high standard.
- **Internet** - vast amount of grey literature. Amongst red herrings may be some quality studies but they may be 'hidden' in the report database of a research centre or university

› should you be worried?

While clients in sectors outside of medical-related fields may not be lining up with evidence-based reference questions, the move towards higher levels of evidence in evaluation is spreading.

...consider this



- Published by U.S. Government full text online in 2003
- Aimed at all educational practitioners
- Expectation that all those within the education system should be able to locate studies on a topic and assess research methods and levels of evidence

That evidence-based query might be coming sooner than you think.

› what could be done in your field?

SEARCH FILTERS - Could retrieval of evidence-based material be improved by developing search strategies for particular databases, as has been the practice in medical fields?

Search filters have been successful in medicine, allowing large search results of evidence-based items to be limited to those using particular methods. They are unlikely to work in most other fields as methodology has been rarely indexed. Material indexed without stressing methodology, and minus an abstract, is still likely to be missed without retrospective indexing or hand searching.

- **RETROSPECTIVE INDEXING** - Should material be re-indexed to improve retrieval?

Justifying the time and money spent re-cataloguing the holdings of one library, let alone co-ordinating efforts for an entire field, is difficult, especially when it is not certain that the evidence-based movement will become as entrenched as it is in medicine. Yet calls have been made for wide scale retrospective indexing in fields such as road safety (Roberts et al. 2001). Retrospective indexing is a costly exercise, whether on a local or field-wide scale, but so is conducting an experiment or implementing interventions without knowing whether the same thing has been done before.

› what you can do...with your client

As with any reference query parameters need to be set.

- **BE INFORMED** enough to take on a educative role - teaching the client when they make the initial approach about strong and weak meanings of "evidence".
- **EXPECT DIFFICULTIES** in most fields in locating material specifying methodology. Explain to the client what may be possible and how time consuming the task may be - do they want you to hand search older material for example?

› what you can do...now

- **GET CATALOGUING** to create your own search tools - at least start indexing new material with evidence-based terms. And consider making a business case for retrospective cataloguing - building an "evidence-base" for your organisation.
- **SPREAD THE WORD** - tell others in the profession (especially students and new graduates) so that whatever field they may work in they might be prepared for a rise in the public profile of evidence-based evaluation.

Andrew Meier
Information Officer
Centre for Automotive Safety Research
University of Adelaide

andrew@casr.adelaide.edu.au
Tel +61 8 8303 5890

references

- Coalition for Evidence-Based Policy (2003) Identifying and implementing educational practices supported by rigorous evidence: a user friendly guide Washington DC: Institute of Education Sciences, US Department of Education http://www.ed.gov/rschstat/research/pubs/rigorousevid/rigorousevid.pdf
- Roberts I, Bunn F, Wentz R (2001) How can we discover what works in the prevention of road traffic crashes? in Peden M (ed) Proceedings of WHO meeting to develop a 5-year strategy for road traffic injury prevention Geneva: World Health Organisation, p48-49

acknowledgements

Thanks to Dr T.P. Hutchinson for his sharing his knowledge.

The Centre for Automotive Safety Research receives core funding from both the Motor Accident Commission and the Department for Transport, Energy and Infrastructure in South Australia.

The views expressed in this poster are those of the author and do not necessarily represent those of the University of Adelaide or sponsoring organisations.

Centre for Automotive Safety Research