2017 Online Conference

Knowledge Translation Outcome Measurement

Hosted by AIR's Center on Knowledge Translation for Disability and Rehabilitation Research (KTDRR)

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Developing the Science of Enabling and Measuring Evidence Uses

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3rd November 2017

‘Knowledge Translation Outcome Measurement’
The Annual Conference of the Center on Knowledge Translation for Disability and Rehabilitation Research (KTDRR)
American Institutes for Research (AIR)

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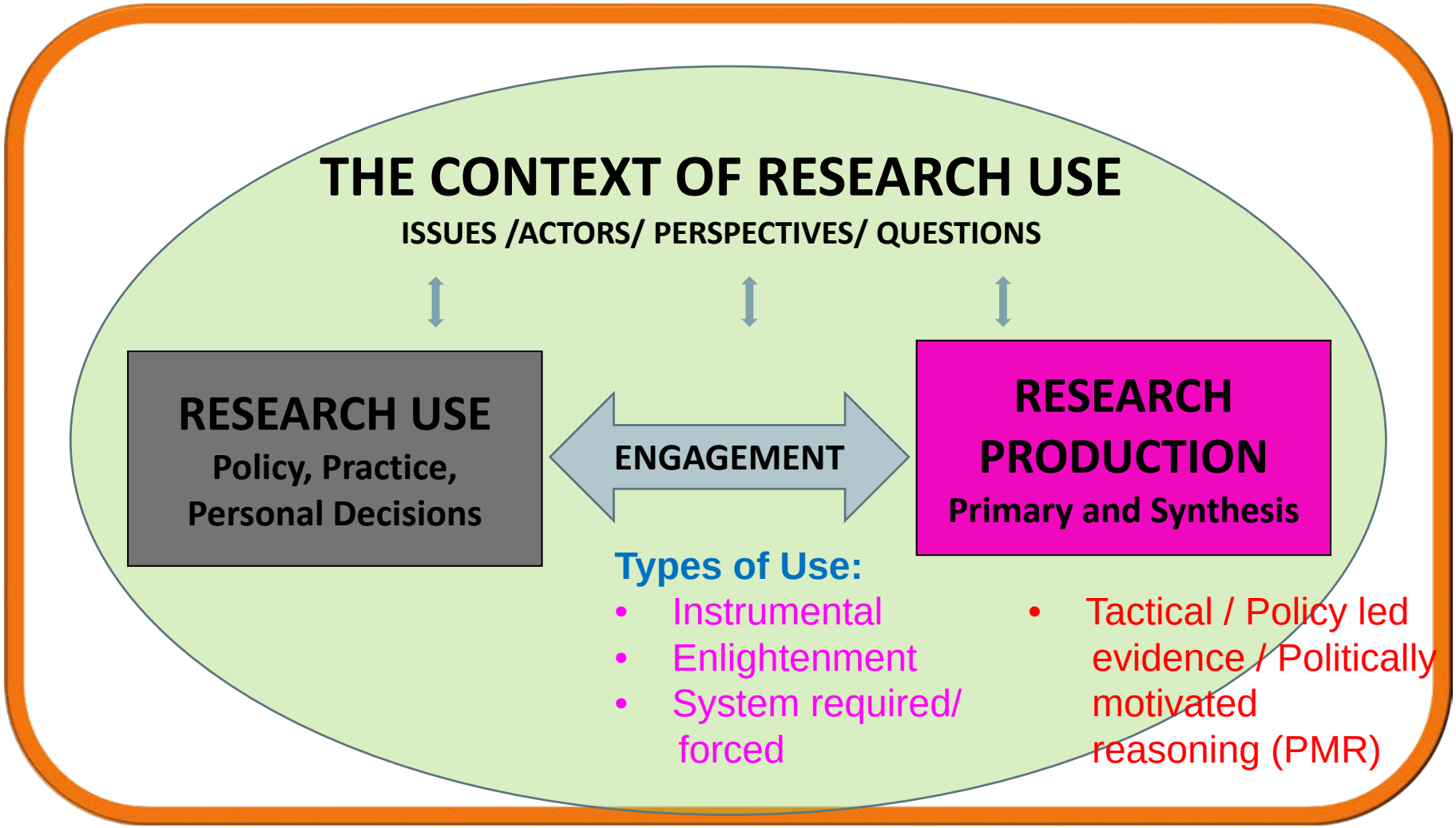
http://eppi.ioe.ac.uk

What do we want to achieve – and what do we need to achieve this?

1. In what ways might research help decision making?
2. Clarifying what we know: Synthesis of evidence from systematic reviews
3. Ensuring that we are making justifiable evidence claims from that evidence
4. Developing clarity and research on enabling the use of that research
5. Research on research use actions and outcomes
6. Studies of decision making

RESEARCH USE ECOSYSTEM
with engagement



Research is not value free: Perspectives

- Different individuals and groups (citizens. Policy makers, professionals) have different issues and ways of understanding these and different priorities:

❖ Topics: what topic is of interest?
❖ Theories: how is this topic and issue understood?
❖ Values: what is the basis of making a decision?

- And so different evidence sought and considered – and different decisions made

1. In what ways might research help?

- What is the issue?
- What are the different perspectives that people hold about this?
- Analysis of where research might help (may be several places/stages)
- May need empirical data and conceptual analyses of the issues for each of these points
- Leading to: Range of research questions (and thus syntheses of relevant evidence)

1 = Science (and values) of problem definition.

2. Synthesis of evidence from systematic reviews – the logic of systematic reviews to inform decision making

i. What is the research question?
ii. What do we know already (from existing research)? *(and how do we know it?)*
iii. What more do we want to know? *(and how could we know it?)*

- So how can we go about identifying and using existing research?

I know a study….

May provide insights but dangers:

- Trustworthy?- methodological fallibility of individual studies
- Representative of what known – random error
- Relevant – focus/context

I know an expert…

Many skills but:

- Opinion or research
- Practice or research knowledge
- Non explicit theoretical and ideological assumptions (“single topic pressure groups”)
- Boundaries and depth of knowledge (hidden sampling bias)
- Up to date (research evolving all the time)
- Unclear method of synthesis (hidden interpretive bias)

I have undertaken or read a literature review….

But may be dangers from lack of clarity or quality or relevance of:

- Review question and its theoretical and ideological assumptions
- Review principles and methods such as fit for purpose:
  - Boundaries of knowledge
  - Identification of studies
  - Quality and relevance appraisal of included studies
  - Analysis/synthesis of included studies

‘A review of existing research using explicit, accountable rigorous research methods’

Similar to primary research:

- Same expectations of rigor and transparency
- Same range of questions and assumptions (not just impact)
- Methods of review reflect methods and assumptions of primary studies
- Increasingly include mixed methods

A higher level of analysis:

- Data usually from pre-existing studies rather than new primary data
- Usually more justifiable evidence claims than from individual studies alone

2 = Science of synthesis methods

Dimensions of difference of systematic reviews

Questions	Open	Closed
Relation to theory	Generate	Test
Approach to synthesis	Configuring	Aggregating
Methods	Iterative	A priori
Literature search	Theoretical	Exhaustive
Quality assessment	Value study contributions	Avoid bias
Concepts	Emergent	Pre-specified
Review use	Enlightenment	Instrumental

Adapted from Gough et al. (2012, 2017).

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3. Justifiable evidence claims from systematic reviews

Three Dimensions

- Review method: Standard+Suitability+Relevance
- Included studies: Standard+Suitability+Relevance
- Evidence produced: Nature + Extent

3. Science of how we appraise reviews and their findings

Dimension 1: Review method

Sub-dimensions:

a) Methods standards achieved: how well was review undertaken methodologically?
b) Suitability of the review method: Is this an appropriate method for answering this review question?
c) Relevance to review focus: Is the way that the review is conducted appropriate for the specific focus of the review question?

Example of components of appraisal instruments to assess Dimension 1:

AMSTAR: (a) Methodological quality

ROBIS: (a) Concerns with the review process; Risk of bias; (c) Relevance

Dimension 2: Included studies

Sub-dimensions:

a) Methods standards achieved: how well were the 'included studies' undertaken methodologically?
b) Suitability of the research methods of the 'included studies': Were these appropriate methods for answering this ***review*** question?
c) Relevance to review focus: Is the way that the 'included studies' were conducted appropriate for the specific focus of the ***review*** question?

Example of components of appraisal instruments to assess Dimension 2:
GRADE: (a) Study design; (a & b) Study limitations; (c) Indirectness
CERQUAL: (a & b) Methodological limitations; (c) Relevance

Dimension 3: Evidence produced by the review

Sub-dimensions:

a) Nature of the included studies: qualities of the evidence when considered together (such as heterogeneity, statistical independence).

b) Extent of evidence from the included studies: further to issues of quality maybe issues of the extent of evidence available to address the review question.

Example of components of appraisal instruments to assess Dimension 3:

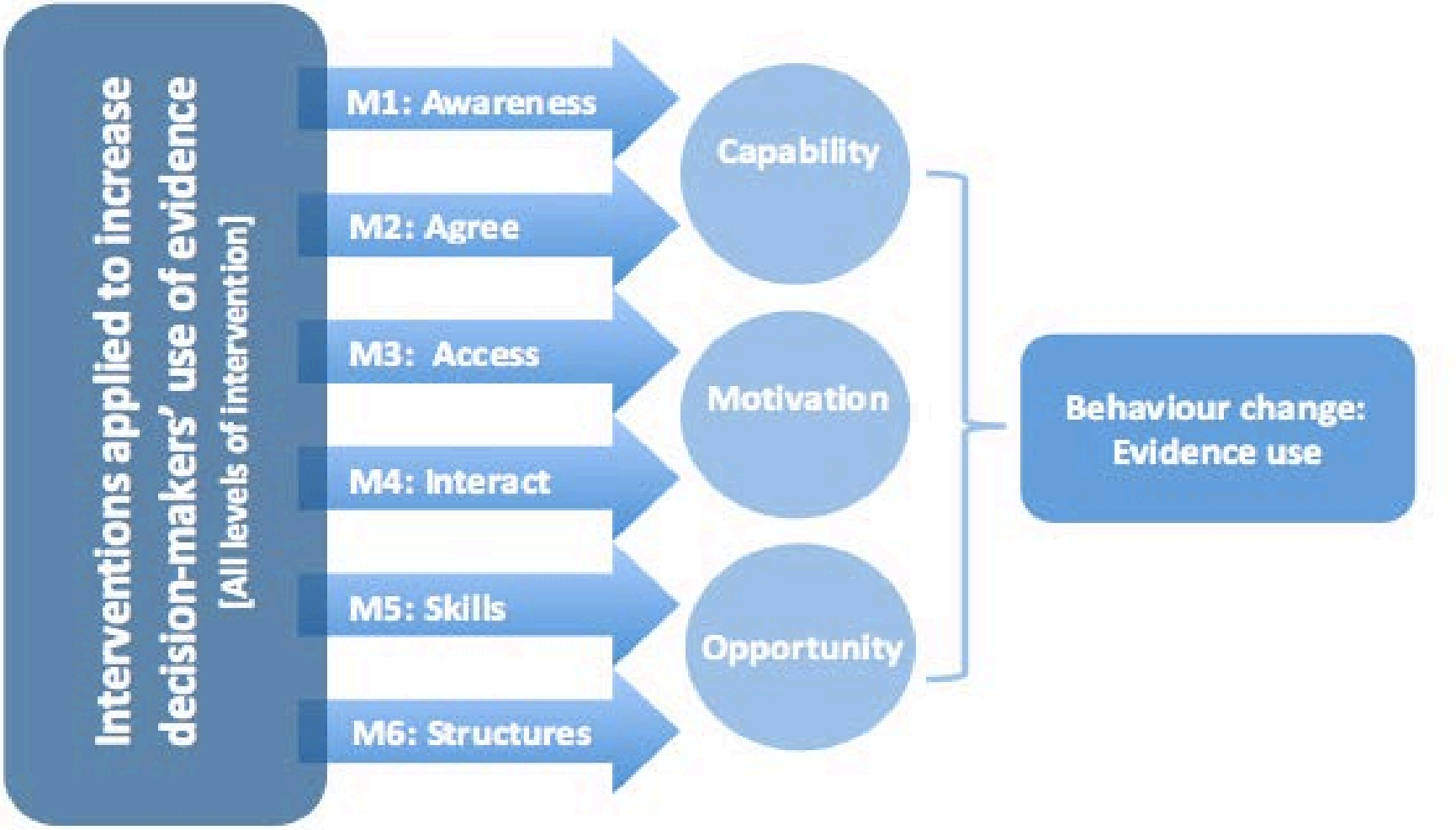
GRADE: (a & b) Inconsistency; Imprecision; Publication bias; Magnitude of treatment effect; Impact of confounders; Dose /response

CERQUAL: (a) Coherence; (a & b) (b) Adequacy of data

Example of components of appraisal instruments to assess Dimensions 2 & 3:

Both GRADE and CERQUAL: Quality of evidence for each specific finding

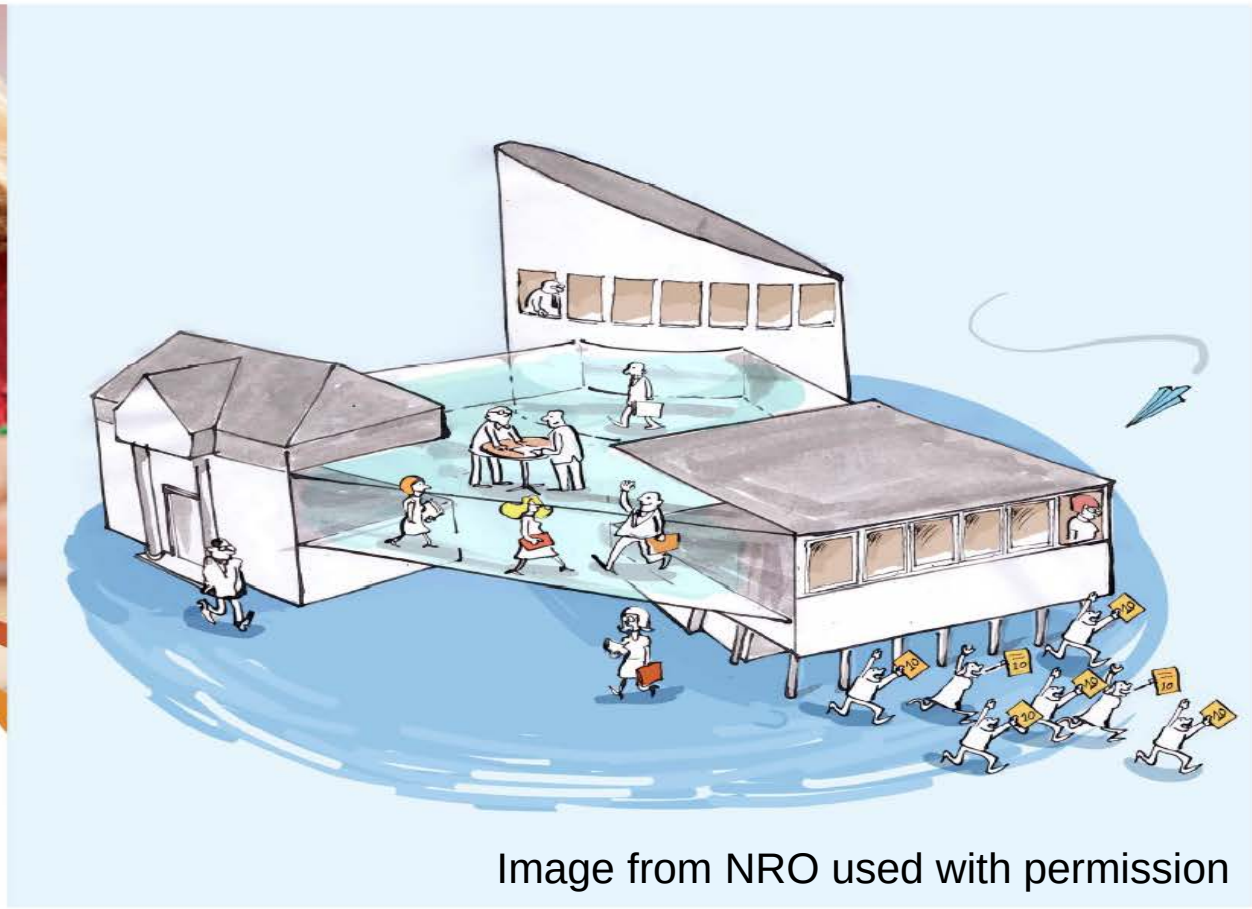
4. Clarity on methods of enabling use Research on research use methods



From Langer et al., 2016 (see slide 23). Copyright owned by authors.

Creating a Common Playground for: Researchers + Policymakers + Teachers

– would you expect this to be effective?



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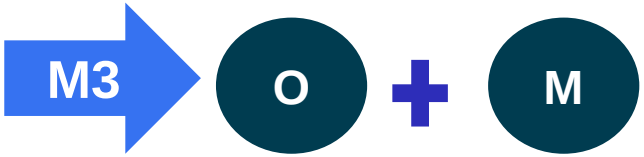
What works to increase evidence use?

Interventions facilitating **access** to research evidence, **conditional on**



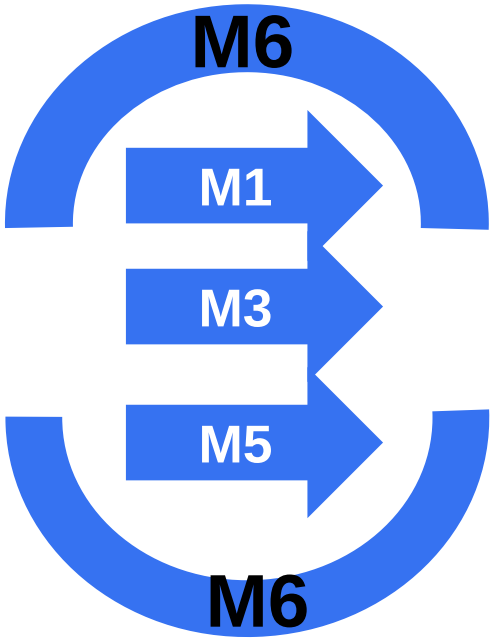
Interventions building decision-makers' **skills** to access and make sense of evidence, **conditional on**

Examples of insights from the social sciences:

- Adult learning theories;
- Framing, tailoring, narratives;
- Information design.

What works to increase evidence use?

Interventions fostering changes to decision-making **structures and processes**, by **formalising & embedding** other mechanisms of change.

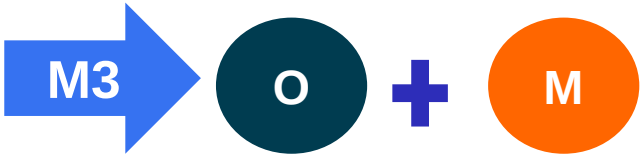


Examples of insights from the social sciences:

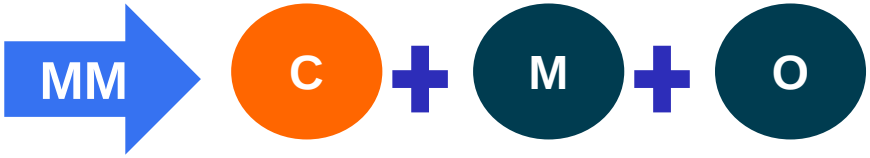
- Use behavioural techniques, including nudges (e.g. nudging evidence use);
- Build organisational capacities and support organisational change;
- Institutional frameworks and mechanisms (e.g. Parliamentary Select Committees' Evidence Checks).

Evidence of no effects

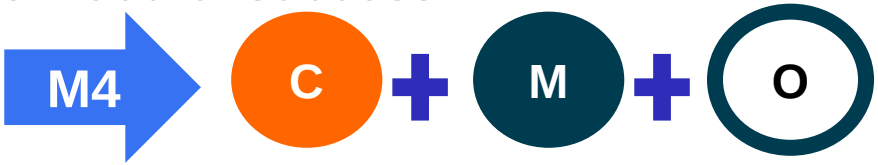
Interventions that take a passive approach to **communicating** evidence.



Multi-component interventions that take a passive approach to building EIDM skills' without active educational components.



Unstructured interaction and collaboration between decision-makers and researchers tended to have a lower likelihood of success.



Examples of insights from the social sciences:

Social influence, collaboration, relationship building, and group interaction can be used to *build a professional identity* with *common practices and standards of conduct*.

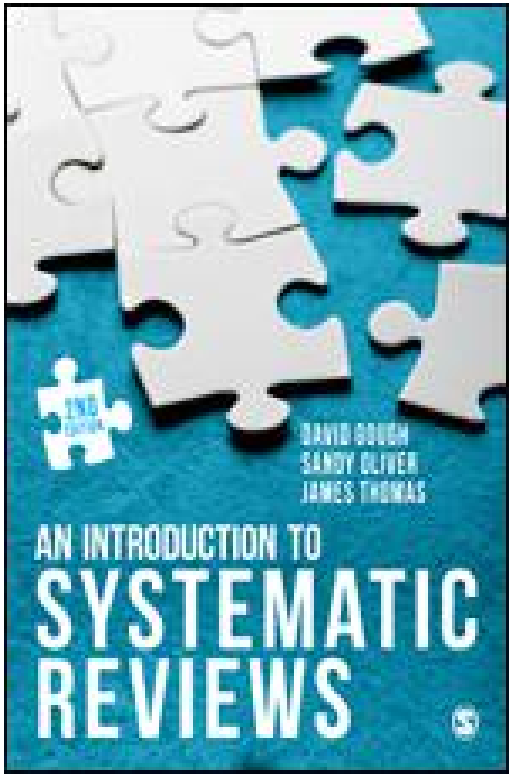
5. Research on research use actions and outcomes

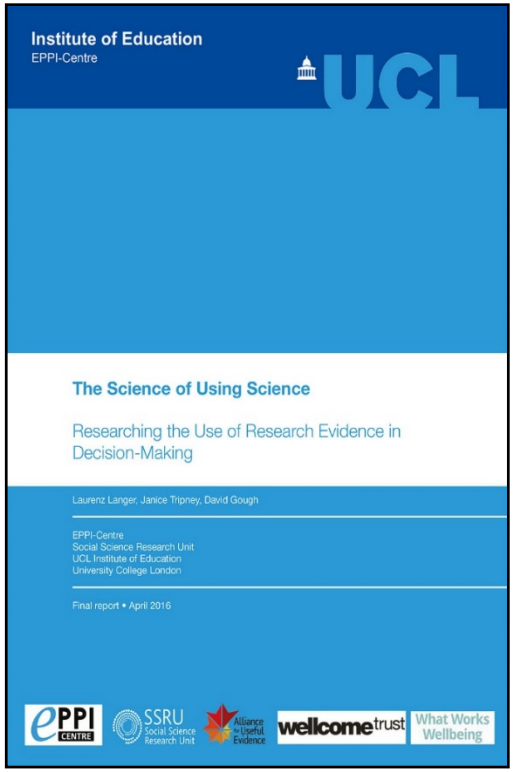
We need to:

- Monitor our activities to enable research use
- Evaluate their effectiveness (in terms of both consideration of evidence and impact)
- Study the processes of decision making

5. Science of enabling research use
6. Science of decision making

Systematic Review Methods + The Science of Using Science





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