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## **Chapter 4**

### **The Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre, United Kingdom**

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*In this chapter, we are presenting the Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre of the University of London. The Centre aims to develop and promote participatory and user-friendly systematic reviews that address important questions in policy, practice and research in the public interest.*

#### **Aims and function**

The [Evidence for Policy and Practice Information and Co-ordinating \(EPPI-\)](http://eppi.ioe.ac.uk/) Centre is part of the Social Science Research Unit at the Institute of Education, University of London (<http://eppi.ioe.ac.uk/>). Its work on systematic research synthesis for evidence informed policy and practice started in 1993 with the aim of developing and promoting participatory and user-friendly systematic reviews addressing important questions in policy, practice and research in the public interest (Oakley *et al.*, 2005). It attempts to achieve these aims through a number of interrelated strategies.

The first strategy is to develop a broad conceptual framework for understanding, undertaking and using question-driven reviews. This includes examining the origin and nature of the questions being asked, the answers produced, and the relationship with policy, practice and individual decision-making. Second, by developing methods and tools for systematic reviews answering all types of research questions and including all types of research evidence. Third, undertaking reviews in-house and supporting others to undertake reviews and adding to the evidence base in different discipline areas. Fourth, providing support and training to develop capacity in evidence-informed policy and practice. Fifth, working with others nationally and internationally to achieve these aims and products.

## Methods

### *A broad conceptual framework*

#### *To be systematic*

Any individual research study is fallible and more reliance can usually be put on the full corpus of research relevant to a research question. Traditionally reviews of literature have not been explicit about their methods and so it is not evident why a review was taken in a particular way, why it included some but not all of the potentially relevant research literature and why it came to the conclusions that it did. In contrast, systematic reviews aim to meet the standards of primary research of being explicit about their methods so that the results are accountable; so that one can assess the appropriateness of the methods used and be convinced that the findings were not subject to some form of hidden bias. Reviews are also important to ensure that research is available to non researchers so that decisions can be informed by research as well as values, resources, and practice knowledge (Hargreaves, 1996; Hillage *et al.*, 1998).

#### *Users question driven and interpreted and implemented reviews*

The EPPI-Centre's interest in evidence-informed policy and practice is based on the use of systematic reviews to make a difference by answering the questions of policy makers, practitioners, users of services and other members of society. Systematic reviews ask what do we know from research in relation to different questions. Different individuals and groups will have different concerns and different questions, and this should lead to a range of different user, question-driven reviews. A framework for different types of review thus needs to take into account that there will be a plurality of reviews being used in different ways by different individuals and groups.

Similarly, the findings of research usually have little meaning without separate processes of interpretation and implementation, both of which involve users of research engaging with other types of knowledge. In the same way that reviews have formal systematic procedures to ensure accountability, different but equally important sets of procedures are needed for the two processes of interpretation and implementation of reviews. Such developments in the use of evidence for policy and practice are manifested in brokerage agencies such as the Canadian Council on Learning, and the English National Institute for Health and Clinical Evidence and Social Care Institute of Excellence (see other chapters in this volume).

#### *A framework for all systematic reviews*

The systematic approach to reviewing literature has become routine in the review of quantitative experimental studies through statistical meta-analysis in health research, but is less common in other disciplines or in addressing other sorts of questions. In parallel and in cooperation with many colleagues across the world, the EPPI-Centre develops methods of systematic review that apply to all research questions and thus can include all types of research data including both quantitative and qualitative data and synthesis.

The range of current systematic reviews is increasing rapidly and reviews now vary on many dimensions such as (Gough, 2006):

- the question being asked. For example, exploring or generating theories of cause or testing the efficacy of interventions;
- whether the method of review is specified a priori or develops iteratively during the progress of the review. For example, the iterative approaches used in some forms of meta-ethnography (Noblitt and Hare, 1988), critical interpretative synthesis (Dixon-Woods *et al.*, 2006), realist synthesis (Pawson, 2006) and meta-narrative reviews (Greenhalgh *et al.*, 2005);
- whether the literature is searched exhaustively, is sampled in a purposive way and/or until a sufficient amount of references has been found (saturation);
- whether empirical or conceptual data is being considered;
- whether numerical or narrative data is used as evidence for the review and in the analysis and process of synthesis of the review;
- whether the synthesis is predominantly meta-empirical as an integration of “facts” within an accepted theory or world view or meta-conceptual as an integration of different conceptual views.

As the Methods for Research Synthesis Node of the ESRC National Centre for Research Methods, the EPPI-Centre is creating a matrix of all the research questions used in the social sciences and the actual or potential methods of research used to answer these questions. It is too soon to provide details of the matrix but it is likely to include two dimensions of the research activity (such as describe, measure, compare, relate and evaluate) and the use of theory (such as generate, explore or test theory). We are then applying this matrix to examine: (i) all the actual and potential questions that could be asked by systematic reviews; (ii) the actual or potential methods of review; and (iii) the conceptual and practical challenges that these methods involve. In doing so, we aim to provide an overall framework to understand the range and nature of systematic reviews, to chart their development and to assist further methods development in the future.

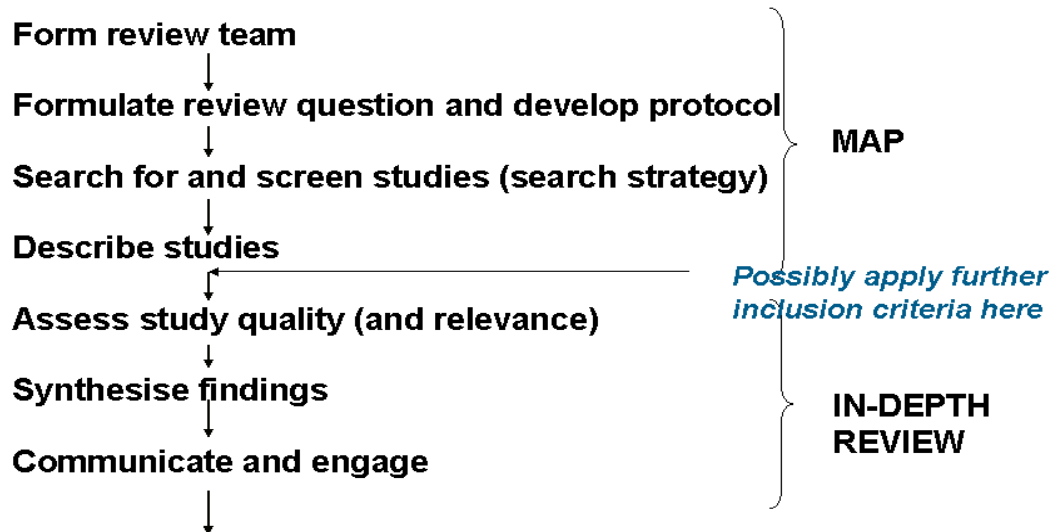
In addition, the framework has to take account of the fact that not all reviews are of the same size and scope. They vary in terms of the breadth of the issues considered, the depth to which they are examined, and the time and financial resources invested to achieve these aims (Gough, 2006).

### ***Methods and tools***

As review questions and methods can vary so extensively (as shown by the matrix of all types of review) the EPPI-Centre develops procedures that can be used for many types of reviews.

One example of such a procedure is systematic mapping of research that describes the nature of the research that has been undertaken (Peersman, 1996). This is a description of all the research identified by the systematic review as relevant to answering the review question (see Figure 4.1). The map is a useful product in its own right in providing an analysis of research that has been undertaken and also helps inform the nature of the synthesis that could be of all of the map or just part of the map. This ability to narrow down from the map to the in-depth review and synthesis means that the original question can be broader than it might otherwise have been (Gough 2005 In Press a).

Figure 4.1. Mapping and synthesis



Another example of flexibility of methods is the development of a process for quality and relevance appraisal of studies. There are many quality appraisal tools available but these typically assess the quality of a study in its own right rather than in terms of what value it brings to answering the review question. The EPPI-Centre's Weight of Evidence system provides a process for distinguishing the generic judgement of quality of execution of a study, from the review specific judgements of appropriateness of the research design for answering the review question and the focus of the study (Gough, In Press a). The Weight of Evidence approach does not provide detailed criteria for making these judgements but a system for such judgements to be made and described by the authors of reviews.

A further example is the use of mixed methods reviews, where a review question is addressed by asking subquestions which are addressed by different methods and then compared with each other. In a review on barriers to healthy eating in children and young people, a systematic review of experimental studies of the efficacy of health promotion interventions to increase healthy eating was undertaken in parallel with a conceptual synthesis of research on children and young people's views about health and eating (Harden and Thomas, 2005). The studies of efficacy showed that the health promotion interventions were effective to some degree but may have been much more effective if they had been devised taking into account user views. For example, the synthesis of views studies showed that children considered fruit and vegetables as very different but most health promotion interventions combined messages to eat more fruit and more vegetables. Also, children thought that health was an issue for parents rather than them and so were probably less likely to be convinced by exhortations to eat fruit and vegetables in order to be healthy. Fashion and image might be much more effective health promotion strategies. It would be wrong to assume that health promotion interventions are not very effective simply because they have been devised without much consideration of the research on the target audience.

The Centre also develops review tools such as EPPI-Reviewer, a web based software system to manage all stages of a review. This includes bibliographic capture of references from electronic bibliographic databases, management of those references and associated electronic and hard copies, screening against review inclusion criteria, data coding for mapping or data extraction, quality assurance, both quantitative statistical meta-analysis and qualitative thematic analysis, and data organisation for reporting of the review. EPPI-Reviewer can be used with different screening, coding and analytic schemes and several in-house guidelines have been developed for EPPI-Centre reviews with generic, discipline specific and review specific coding frameworks (or guidelines). This is accompanied by a review companion to help review authors undertake a review as well as a tool to help in the assessment of the quality of completed reviews. Just as with the development of broad methods for undertaking reviews, the software does not dictate detailed decisions about how a review should be undertaken but provides tools to enable the review process for all types of reviews.

The same enabling approach is taken with the structure of the Centre's technical reports that in being transparent detail all aspects of the methods of a review. The structured approach makes it easy to check how each part of the review has been undertaken. Such detailed reports are not, however, suitable for all audiences so the Centre has developed a four-level communication strategy of a one page summary, a fifteen- to twenty-page main report, a full technical report, and web access to all the data codings (from EPPI-Reviewer) on which the report was based.

### ***Capacity-building***

Although the need to review what we know before undertaking new research, policy or practice has been known for a long time, the widespread use of systematic methods of review is quite recent (Chalmers, Hedges and Cooper, 2002). The increased use of systematic review evidence requires a culture change in the use of research and balancing the investment in new primary work and in consolidating what we know. We still need much new creative research but this has to be balanced against the wastage of many under resourced and ineffective studies, the duplication of work already done, and research not focused on the issues of most relevance to decision-making.

One part of the culture change is the capacity in understanding and undertaking reviews. The Centre attempts to assist with capacity-building by developing methods and tools for review, supporting external groups in undertaking reviews and in providing a range of training resources in reviewing. This includes tailored workshops for other organisations, stand alone workshops for individuals, and a full MSc in Evidence for Public Policy and Practice. The workshops contain didactic sessions with discussion and small group work, but e-learning will soon become an important mode for training and review support.

### ***Work with others***

None of this work would be possible if the Centre was not supported by many partners and collaborators. The Centre is funded by the university and by many grants from a range of government research councils, charitable foundations and government agencies and departments.

The Centre works with many others who are also facing the same challenges of developing methods and resources for reviews including the external EPPI-Centre groups. For example, the Centre has formal links with the Cochrane Collaboration

([www.cochrane.org](http://www.cochrane.org)) (the body that coordinates reviews on the efficacy of health interventions) as co-directors of the Cochrane Health Promotion and Public Health Field.

As part of this the Centre promotes the production and use of reviews in health promotion and maintains a web-based register of experimental trials and of systematic reviews. The Centre is also a formal partner of the Campbell Collaboration ([www.campbellcollaboration.org](http://www.campbellcollaboration.org)) which is an international umbrella group to support reviews on social interventions.

## Issues

Despite all the international activity to develop methods of reviews there are a number of major challenges faced by those committed to evidence-informed policy and practice.

Firstly, the culture change is still in its infancy and there are many who are unaware of the importance of such an approach. Reviews are not cheap and need resources in order to be carried out just as with primary research. Any major change in funding and support for reviews might quickly reverse the culture change in support for evidence-informed policy and practice of the last few years.

Second, we need to acknowledge that there are those who are sceptical about the value of systematic reviews. Some of these concerns are simply critiques of poor reviews or processes that need to be developed, and this needs to be taken seriously and seen as a resource to drive improvements in reviews by the systematic review community. Some other concerns are due to misunderstandings such as the belief that reviews are only of randomised controlled trials rather than all types of research questions and research data. Others critiques are more fundamental and arise from those with different values or views of science or who have an interest in maintaining the status quo without explicit methods of synthesis of empirical or conceptual knowledge (Oakley, 2006).

Third, in order to achieve such a culture change, reviews need to be shown to be useful, but this is easier to demonstrate with a critical mass of evidence reviews rather than relatively few single reviews. In health, the Cochrane Collaboration has such a body of review evidence which has made a difference to policy and practice but it is still early days for reviews in education and other social sciences.

Fourth, more reviews need to be demand-led so that they are more likely to be of use. Academics are users of research and are well placed to determine the focus of primary research and of reviews. But they may not be so well placed to determine the focus of all research that is relevant to other users of research such as policy makers, practitioners, and members of the public. Involving these others users in driving demand for reviews and thus also for primary research (Gough, in press b) should make research more democratic, more fit for purpose and more demand led.

Fifth, whoever determines the focus of reviews, we need to develop better formal processes for the interpretation and implementation of review findings. Undertaking reviews, however sophisticated, is not going to be sufficient if we do not also have sophistication in other parts of the evidence to decision-making cycle.

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