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ONE

The literature review: its role within research

Learning Objectives

After reading this chapter, you should be able to:

- Define a 'literature review' and rehearse arguments for its importance.
- Describe some benefits from reviewing the literature in a systematic way.
- Identify landmarks in the development of research synthesis.
- Make an initial assessment of the extent to which reviews in your own discipline or topic area can be described as 'systematic'.

Introduction

Room without a (re)view?

Conducting any type of research project without conducting a literature review can be likened to travelling to a strange and exotic country but never coming out of your hotel room. How will you convince your friends back home that you truly sampled the delights of this exotic destination? Granted you may reach your destination, you may even achieve the occasional moment of insight but you will be starved of so many valuable moments of discovery. It may seem to an outsider that you have never even travelled at all!

Without a literature review, you will not be able to understand your topic fully. You will not be able to identify what has already been researched and what remains to be explored, and you will deny yourself valuable insights into those methods that are or are not appropriate for investigation of your topic. You will not only face the danger of reinventing the wheel but, even more critically, you will run the risk of 'reinventing the flat tyre'!

What is a literature review?

Fink (2005) succinctly defines a literature review as a 'systematic, explicit, and reproducible method for identifying, evaluating, and synthesising the existing

body of completed and recorded work produced by researchers, scholars, and practitioners'. Particularly noticeable is the word 'systematic', a key concept for the title and content of this book. If criticism can be levelled at the growth in popularity of the term **systematic review** it is the unintended implication that there is an acceptable alternative, the unsystematic review! As we shall see all reviews share the requirement of original empirical research, namely to be systematic. Different types of review (Box 1.1) should differ only in the degree to which they are systematic – according to each review's role and function – and each type should help by telling you what exactly they have and have not done.

Box 1.1 Some common types of review

Critical review
 Integrative review
 Literature review
 Mapping review/systematic map
 Meta-analysis
 Mixed studies review/mixed methods review
 Overview
 Qualitative systematic review/qualitative evidence synthesis
 Rapid review
 Scoping review
 State-of-the-art review
 Systematic search and review
 Systematic review
 Systematised review
 Umbrella review

Note: These different types of review are defined and explained in Chapter 2. For the present it is sufficient to acknowledge that a plethora of terms exists for systematic approaches to a literature review.

Hart (1998) unpicks more detail of what a review process entails, focusing on the essential components, the documents themselves:

the selection of available documents . . . on the topic . . . written from a particular standpoint to fulfill certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed.

If you are to perform this *effectively* then you will need to put in place processes to ensure that not only is the task completed in an *efficient* manner but also that

it is fulfilled to the right *quality*. In the context of literature reviews, quality means 'appropriate breadth and depth, rigor and consistency, clarity and brevity, and effective analysis and synthesis' (Hart, 1998).

Why is the literature review so important?

Bem (1995) notes that 'authors of literature reviews are at risk for producing mind-numbing lists of citations and findings that resemble a phone book – impressive case, lots of numbers, but not much plot'. If we want to base our decisions on evidence it makes sense to use the best available evidence. By and large the best evidence for many decisions comes from a **systematic review** of *all* the evidence. Mulrow (1995) argues that reviewing in this way is a search for the whole truth, rather than just one part of it, and is thus a 'fundamentally scientific activity'. A specific and reproducible method is used to identify, select, and appraise all the studies of a previously agreed level of quality (either to include all studies or only those that meet a minimum quality threshold) that are relevant to a particular question. The results of the studies are then analyzed and summarised. Synthesising evidence helps us to find out what we know and don't know about what works and what doesn't work. A good **research synthesis** can generally give us the most reliable estimate of the effectiveness of a specific intervention, and it can identify gaps in our knowledge that require further research. It can also give us a sense of the strength of the available evidence and the quality of the studies, thereby indicating how much confidence practitioners, service users, managers, policymakers, and the popular media should have in the results.

A research synthesis can also help us find out how well a policy, programme, technique or intervention works in different subgroups of users and inform us about its potential to cause harm. Some research syntheses can shed light on the pros and cons of different ways of organising or delivering services or policies. A research synthesis that includes considerations of cost can help shape our judgements about whether a chosen policy or course of action provides good value for money.

Yet another reason to synthesise the results of different studies of a given intervention is to learn whether findings are consistent across multiple studies. Light and Pillemer (1984) have written that 'disagreements among findings are valuable ... [and that] conflicts can teach us a lot'. This is because we are able to see in what settings a particular social policy might succeed, under what circumstances an educational programme might work best, or what dose of a drug is most effective.

A good research synthesis frequently highlights weaknesses in the evidence and argues for further research. What should service users, policymakers, and others decide in the absence of evidence? Even when a research synthesis shows strong, unambiguous evidence to support one course of action, 'politics' may make that review's findings less influential than well-coordinated lobbying. As Chalmers, editor of the James Lind Library, and colleagues (2002) observe: 'Research synthesis sometimes yields unwelcome results that challenge strongly held opinions and

other vested interests'. Yet even if the recommendations from a research synthesis are disregarded, its very existence allows more transparency about the role of other factors in decision making. No matter how well they are done, research syntheses are not a panacea for all problems, but they do offer a valuable aid to decision making.

Where does the literature review fit within the context of research?

The near ubiquitous presence of the literature review in so many disciplines and areas of policy development must not be allowed to mask the fact that there are essentially three contexts in which a literature review will be showcased:

- 1 As a component, or even entire ingredient, of a dissertation, thesis or other academic deliverable.
- 2 As a peer-reviewed publication, typically in a journal or, depending upon the discipline, as a book chapter.
- 3 As a report resulting from a funded research project or other commissioned research or consultancy.

Each of these contexts places specific additional requirements on the already polymorphic shape of a literature review. For example, where the literature review is intended to inform a dissertation or thesis, there may be a strong imperative to engage in conceptual innovation, to be reflexive about one's methods and to demonstrate a journey of personal growth through the methodology. A student is expected to demonstrate that they have acquired a 'knowledge about a particular field of study, including vocabulary, theories, key variables and phenomena, and its methods and history' (Randolph, 2009, w160). Furthermore they are required to provide evidence that they have become sensitised to the 'influential researchers and research groups in the field'. Of course these contexts are not mutually exclusive as the literature review from a thesis can subsequently be modified to become a 'legitimate and publishable scholarly document' (LeCompte et al., 2003).

Where the output is a peer-reviewed publication the challenge may be to funnel a wealth of data into the tight constraints of a journal's house style and word limits. Admittedly this situation has been eased somewhat by the relatively recent facility of online supplementary materials. Nevertheless there remains significant variation in how journals, and their parent disciplines, handle reviews with some disparagingly refusing to even consider them while, in contrast, other journals make a virtue of annual review-type commissioned overviews and literature surveys.

Finally requirements for a funded research project or for consultancy may be evidenced in tight time constraints, in a quest for answers rather than issues, and in a tendency for commissioners to sidestep the methodology and cut straight to the results or findings. In particular, systematic reviews can yield much information of use to policymakers:

including information about the nature and extent of a problem, and the potential benefits, harms, uncertainties, and costs of interventions and policies. Policymakers may also want to know about the impact on different groups in various settings ... [and to] answer questions about how best to disseminate information and innovations; about a particular community's receptiveness to proposed interventions – whether the interventions are appropriate to local culture and context; and about the factors influencing study outcomes. (Sweet and Moynihan, 2007, w187)

Such distinctions are explicitly explored in Chapter 9 which deals with different types of presentation for different audiences and purposes. For the moment, it will be useful to flag the distinction made by Mays and others (Mays et al., 2005; Pope et al., 2007) between reviews for knowledge support and those for decision support. Reviews for knowledge support have as their endpoint the summarising and synthesis of research evidence (i.e. what currently exists and is known about a topic). They may usefully highlight gaps in the evidence base as a target for future research; seen in closest proximity within a thesis which may have the specific subsequent objective of addressing such a gap. Reviews for decision support seek to go further in bringing the existing evidence to bear on the particular individualised problem in hand. Gaps in the evidence base in this context lead to the supplementary question '... and what are we going to do about this issue or problem in the meantime?' Such questions are well-typified in a survey by Lavis and colleagues (2005) who found that managers were interested in reviews that addressed:

- decisions about continuing, starting/expanding, stopping/contracting or modifying a programme;
- how to fit programmes or services within an organisation or region (i.e. about governance, financial and delivery arrangements);
- how to bring about change.

In addition both managers and policy-makers were interested in complex questions that combined all three of these questions as well as more general 'what do we know about x?' questions.

Within the healthcare field these knowledge support-decision support poles are unfairly characterised as being occupied by the **Cochrane Review** and the **health technology assessment**. In actuality, Cochrane Reviews are increasingly striving to contribute to decision making while health technology assessments may look beyond the immediate problem-focused timeframe to make recommendations for future commissioned primary research.

What types of research question are suitable for literature review?

An early principle to establish is that it is important for the literature review to be question-led. The question, together with the purpose of the review, the intended deliverables and the intended audience, will determine how the data

is identified, collected and presented. It is tempting to consider that a literature review is only useful where a significant body of literature is already known to exist. However even where a researcher believes that they will be the first to examine a particular intervention, policy or programme they need to confirm this from the previously published literature to avoid the phenomenon of presenting islands without continents (i.e. falsely claiming innovation) (Clarke and Chalmers, 1998). A methodology from a proximate field may similarly provide an analogy that can save much development work.

However aside from such a circumstance it is generally true that most literature reviews are based on the assumption that at least one other researcher has at least considered, if not addressed, your question. The exact nature of your question will be shaped and influenced by the goal and focus of the review (Randolph, 2009, w160; Hart, 1998):

Effectiveness questions: What effect does intervention X, compared with intervention y, have on outcome Z? What are the relative cost-benefits of x versus y?

Methodology questions: What research methods have previously been used to investigate phenomenon X? What are the respective strengths and weaknesses of such methods?

Conceptual questions: How has phenomenon X been identified and defined? Which theories have been used to explain phenomenon X? Which theory provides the best fit to findings from empirical studies? What are the main unresolved controversies? What are the underpinning epistemological and ontological foundations for the discipline?

Why review the literature?

Some practical reasons

One familiar phenomenon of this Internet age is the so-called **information explosion** (Major and Savin-Baden, 2010). Quite simply, with increasing numbers of articles being published and with larger quantities of these articles being freely accessible, it is becoming almost impossible to navigate around even the more specialised subject domains. At an individual level we face **information overload**. This occurs when we are overwhelmed by the volume of information that we are facing and are therefore unable to retrieve the information we need. Is there a solution to this situation? One possible way to succeed is by becoming **information literate** – put simply this means acquiring the skills covered in Chapters 4 to 9 in this book:

An information literate person is able to recognise when information is needed and has the skills to locate, evaluate and use information effectively. (CILIP, 2009, w037)

Although technologies are always changing, database interfaces and search engines are continually being upgraded, and new topics continue to appear with

regularity the skills of information literacy that you will be acquiring will stand you well, not simply for the duration of your project or dissertation but onwards through your career and working life.

Some theoretical reasons

There is broad and longstanding general agreement on the purposes of a literature review (Box 1.1), irrespective of your discipline (Cooper, 1989; Bruce, 1994, 1997; Hart, 1998; Galvan, 1999).

Box 1.2 Purposes for a literature review

- to place each work in the context of how it contributes to an understanding of the subject under review;
- to describe how each work relates to the others under consideration;
- to identify new ways to interpret, and shed light on gaps in, previous research;
- to identify and resolve conflicts across seemingly contradictory previous studies;
- To identify what has been covered by previous scholars to prevent you needlessly duplicating their effort;
- to signpost the way forward for further research; and
- to locate your original work within the existing literature.

REFLECTION POINT 1.1

Your reasons for conducting a review

Look at Box 1.2 and identify those purposes which are important to you for your literature review

Which of the points listed most accurately capture your reason(s) why you need to conduct a literature review?

As well as the points we have mentioned, you may have a specific reason for reviewing the literature. In addition to 'taking stock' of what has gone before and identifying a niche for your own research, the literature may help you to design your own research. You may wish to advance a theory against which you might explore a specified hypothesis, to select tools, instruments or scales that are useful in conducting your research and identify research gaps which may signal unexplored topics or research questions. Some of these reasons for reviewing the literature are exemplified in the following brief history of research synthesis.

A brief history of research synthesis

It is impossible even to suggest a tentative date for the origins of research synthesis. Very early on in human history there would have been a need to record what had previously occurred, to compare experiences across cases and gradually to build up a knowledge base of what was now known and what remained unknown. Those who chronicle research synthesis prefer to identify specific landmarks and then to join these with a dotted line to reflect ongoing evolution and development of the methods (Macauley, 2001, w128).

Probably the best, and certainly the most cited, history of research synthesis comes from three of the science's foremost proponents, Chalmers, Hedges, and Cooper (2002), in 'A brief history of research synthesis'. Indeed the pervasive influence of research synthesis is attested to by the authorship of the article with Chalmers from clinical medicine, Cooper from psychology and Hedges from social policy. A more extensive treatment of the same topic is available in *Handbook of Research Synthesis and Meta-analysis* (Cooper et al., 2009). As you read this book you should bear in mind that, notwithstanding the fact that research synthesis began in a select number of disciplines, recent years have witnessed its spread to almost every area of academic activity (Moynihan, 2004, w138).

There is nothing particularly novel about the idea of research synthesis. In 1753, James Lind, the Scottish naval surgeon who was instrumental in the first **randomised controlled trial**, recognised the value of systematic methods for identifying, extracting and appraising information from individual studies as a protection against biased interpretation of research (Box 1.3). However at this period of time it was a particular challenge to identify, acquire and interpret the scattered body of published and unpublished research. Subsequently, developments in **information retrieval**, documentation and document delivery have contributed much to the practicality of research synthesis.

Box 1.3 The first systematic review?

On 20 May 20 1747, James Lind took 12 'similar' patients with scurvy and divided them into six pairs. He carried out different treatments for each pair. Six days later, Lind reported:

The result of all my experiments was that oranges and lemons were the most effectual remedies for this distemper at sea. (w112)

Six years later, in *A Treatise of the Scurvy in Three Parts. Containing an inquiry into the Nature, Causes and Cure of that Disease, together with a Critical and Chronological View* of what has been published on the subject, Lind acknowledged the need to review existing literature systematically and to discard 'weaker evidence':

As it is no easy matter to root out prejudices ... it became requisite to exhibit a full and impartial view of what had hitherto been published on the scurvy ...

by which the sources of these mistakes may be detected. Indeed, before the subject could be set in a clear and proper light, it was necessary to remove a great deal of rubbish. (w112)

Gathering the published research, getting rid of the rubbish, and summarising the best of what remains is essentially the science of research synthesis

Other antecedents to modern research synthesis have been traced to seventeenth-century astronomers who found that combining data from related studies introduced greater precision to their individual observations (Petticrew, 2001). However a closer relative to current methods lay in the work of the statistician Karl Pearson. Recognising the limitations of the evidence on inoculations against fever, Pearson identified the need to bring together multiple small studies in order to arrive at a definitive opinion (Pearson, 1904). Three years later, Joseph Goldberger, a scientist in the United States, reviewed 44 studies of typhoid fever and then abstracted and pooled data from 26 of the 44 studies (Chalmers et al., 2002).

Similar work was undertaken within agriculture by Ronald Fisher and colleagues in the 1930s. However it was not until the 1970s that formal procedures for synthesising studies were labelled as **meta-analysis** by **Gene Glass (1976)** and other social science colleagues. Towards the end of that same decade Iain Chalmers and colleagues at Oxford's National Perinatal Epidemiology Unit compiled an authoritative two-volume compendium of controlled trials in perinatal medicine, *Effective Care in Pregnancy and Childbirth* (Enkin et al., 1989). This internationally-recognised initiative laid a platform for significant achievements in collaborative synthesis of research, from which the **Cochrane Collaboration**, and its sibling the **Campbell Collaboration**, were launched.

In 1984 Light and Pillemer published *Summing Up: the Science of Reviewing Research*, a pioneering work in the recent history of research synthesis. 'Our broad goal,' they wrote, 'is to help readers organize existing evidence in a systematic way,

Table 1.1 Milestones in the History of Research Synthesis

Date	Milestones
1753	James Lind published first 'systematic review'
1904	Pearson published landmark review on effects of vaccines against typhoid
1976	Glass coined term 'meta-analysis'
1984	Light and Pillemer <i>Summing Up</i>
1987	Mulrow <i>The Medical Review Article: State of the Science</i>
1989	Enkin and colleagues <i>Effective Care in Pregnancy and Childbirth</i>
1992	Antman and colleagues illustrated value of cumulation of findings
1993	Launch of <i>Cochrane Collaboration</i> (w042)
1994	Establishment of the UK NHS Centre for Reviews and Dissemination
2000	Founding of <i>Campbell Collaboration</i>

whether a review is motivated by a scientific problem or the need for a policy decision.’ They argued that the new methods of research synthesis applied to many fields, including health, education, and psychology:

Without a clear picture of where things stand now, simply adding one new study to the existing morass is unlikely to be very useful ... For science to be cumulative, an intermediate step between past and future research is necessary: synthesis of existing evidence. (Light and Pillemer, 1984)

Three years later, Mulrow (1987) published an article entitled ‘The medical review article: state of the science’. She delivered a damning indictment of the quality of 50 articles classified as ‘review or progress articles’ published in four leading medical journals (1985–1986). Only one of the 50 reviews ‘had clearly specified methods of identifying, selecting, and validating included information.’ In addition she observed that:

- 80 per cent addressed a focused review question;
- 2 per cent described the method of locating evidence;
- 2 per cent used explicit criteria for selecting studies for inclusion;
- 2 per cent assessed the quality of the primary studies;
- 6 per cent performed a quantitative analysis

She concluded: ‘Current ... reviews do not routinely use scientific methods to identify, assess, and synthesize information.’ On the contrary, these reviews are often ‘subjective, scientifically unsound, and inefficient’ (Mulrow, 1987).

Mulrow’s proposals for a more systematic approach to reviewing and summarising medical evidence were picked up in 1993 when Oxman and Guyatt assessed 36 published reviews and produced their own critique of their quality. They surveyed the reviews’ authors about their levels of expertise, the time they had spent on their reviews, and the strength of their prior opinions. They concluded:

Our data suggest that experts, on average, write reviews of inferior quality; that the greater the expertise the more likely the quality is to be poor; and that the poor quality may be related to the strength of the prior opinions and the amount of time they spend preparing a review article. (Oxman and Guyatt, 1993)

The rising popularity of **evidence-based health policy** and **evidence based practice** in the 1990s led to recognition of the importance of research syntheses in other disciplines such as education (Evans and Benefield, 2001). However not everyone welcomed such a trend (Hammersley, 2001). Nevertheless, a similar political push for evidence-based policy and practice started to gain pace in other fields such as social care and management (see, for example, Davies et al., 2000; Nutley et al., 2002; Trinder and Reynolds, 2000). Governments began to fund initiatives committed to supporting research syntheses, particularly systematic reviews (Davies, 2000).

Many other organisations began producing research syntheses during the 1990s. Several funding bodies began requiring systematic reviews of existing research before considering applications for funding for further study. For instance, the UK Medical Research Council now asks a researcher to demonstrate that a systematic review has been undertaken before it will commission a new trial (Clark and Horton, 2010). This ensures that the question has not already been answered, and that the results of previous research are used in designing the new trial.

In 1999, Mulrow's survey was repeated using 158 articles from six major medical journals (McAlister et al., 1999) each with 'review,' 'overview,' or 'meta-analysis' in the title or abstract or claiming an intention to review or summarise the literature. It found that:

- 34 per cent addressed a focused review question;
- 28 per cent described the method of locating evidence;
- 14 per cent used explicit criteria to select studies for inclusion;
- 9 per cent assessed the quality of the primary studies;
- 21 per cent performed a quantitative analysis.

This snapshot from over a decade ago remains to be updated. However what we have witnessed in the ensuing years is an increasing popularity of derivative versions of the literature review, characterised under the expression in our title as 'systematic approaches'. More than anything this has emphasised that the degree to which any review is systematic lies on a continuum that runs from implicit expert commentary through to **gold standard** systematic review.

What is the place of theory in literature review?

Webster and Watson (2002) defined a successful literature review as one that:

'creates a firm foundation for advancing knowledge. *It facilitates theory development* [italics added], closes areas where a plethora of research exists, and uncovers areas where research is needed'.

In fact the place of theory within literature review is contested, particularly given the fundamentally pragmatic drivers behind the science of systematic review, attested to by the brief history of research synthesis we have already considered. For example much evidence synthesis in the healthcare field is essentially atheoretical – at least in the sense of not acknowledging a specific theoretical contribution. As you move outwards to contiguous disciplines such as public health, health promotion, and nursing, theory is more plentiful. This is similarly the case for such disciplines as social care, education, management and even information systems. Nevertheless such generalisations necessarily oversimplify a much more complex panorama.

Qualitative evidence synthesis, particularly using interpretative techniques such as **meta-ethnography** and **critical interpretive synthesis**, may be construed as essentially theory generating and **grounded theory** approaches have also been used within secondary research. Other techniques such as **realist synthesis** provide an opportunity to explore the application of mid-range **programme theory** to a mix of quantitative and qualitative data. Furthermore the specific systematic approach known as **concept analysis** explicitly seeks to define, expand, and extend the theoretical underpinnings of a target concept.

In actuality, the science of literature review offers multiple opportunities to engage and interact with theory (Table 1.2). Where the authors of component studies have themselves engaged with one or more theories, an evidence synthesis offers the opportunity to consolidate current thinking, even in creating a 'meta-model'. Where the source literature is fundamentally atheoretical, a literature review can be used to generate theory *de novo*. Alternatively it provides a rich test data, set against which existing theories can be examined and modified. Finally, where the literature review does not possess full explanatory power for differences that exist between apparently similar mechanisms or contexts, an extraneous theory may be introduced alongside the data set in an attempt to investigate forensically such differences.

Table 1.2 Examples of the interplay of literature review and theory

Type of review	Reference	Interplay of literature review and theory
Concept analysis	Teamwork: a concept analysis. (Xyrichis and Ream, 2008)	Used Walker and Avant's approach to guide analysis (1995). Literature searches used bibliographic databases, Internet search engines, and hand searches (1976–2006). Based on analysis, proposed definition for teamwork, and identifies essential ingredients for it to take place.
Creation of meta-model	Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science (Damschroder et al., 2009, (w060)	Used snowball sampling approach to identify published theories, evaluated to identify component constructs. Combined constructs across published theories with different labels to remove redundancy or overlap. Created Consolidated Framework for Implementation Research (CFIR) offering overarching typology for implementation theory development.
Meta-ethnography	Using meta-ethnography to synthesise qualitative research: a worked example (Britten et al., 2002)	Four papers about lay meanings of medicines arbitrarily chosen. Used Noblit and Hare's seven-step process for meta-ethnography (1988). Six key concepts identified leading to second-order interpretations (from chosen papers) and construction of four third-order interpretations (based on key concepts/second-order interpretations). Worked example produced middle-range theories as hypotheses to be tested by other researchers.

Type of review	Reference	Interplay of literature review and theory
Meta-narrative review	Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review (Greenhalgh et al., 2005).	Identified 13 key meta-narratives from literatures as disparate as rural sociology, clinical epidemiology, marketing and organisational studies. Researchers in different traditions had conceptualised, explained, and investigated diffusion of innovations differently. Reconciled seemingly contradictory data, systematically exposing and exploring tensions between research paradigms.
Review of theories	Healthcare professionals' intentions and behaviours: a systematic review of studies based on social cognitive theories (Godin et al., 2008, w089)	Systematically reviewed literature on factors influencing health professionals' behaviours based on social cognitive theories. Seventy-eight studies met inclusion criteria. Most used theory was Theory of Reasoned Action or its extension Theory of Planned Behaviour.
Review of use of theory	A systematic review of the use of theory in the design of guideline dissemination and implementation strategies and interpretation of the results of rigorous evaluations (Davies et al., 2010, w061)	Systematic review of use of theory in 235 evaluations of guideline dissemination and implementation studies (1966–1998). Classified theory according to type of use (explicitly theory based, some conceptual basis, and theoretical construct used) and stage of use (choice/design of intervention, process/mediators/moderators, and post hoc/explanation).
Realist review (as complement to effectiveness review)	Realist review to understand the efficacy of school feeding programmes (Greenhalgh et al., 2007, w098)	Effectiveness reviews rarely give detailed information on context, mechanisms, and outcomes of interventions and theories that underpin them. Describes theory and processes in 18 trials of school feeding programmes.
Scoping review	Disseminating research findings: what should researchers do? A systematic scoping review of conceptual frameworks (Wilson et al., 2010, w204)	Searched 12 electronic databases to identify/describe conceptual/organising frameworks for use in guiding dissemination activity. Narrative synthesis undertaken. Thirty-three frameworks met inclusion criteria underpinned by three theoretical approaches (persuasive communication, diffusion of innovations theory, and social marketing).
As precursor to grounded theory conceptual work	The place of the literature review in grounded theory research (Dunne, 2011).	Increasing recognition of the role literature review can play in grounded theory methodology

Summary

Like all science, research synthesis is evolving and uncertain. For example, the application of statistical methods for pooling and synthesising the quantitative results of different studies – meta-analysis – is steadily improving, though considerable challenges remain (Egger et al., 2002). While much early development was undertaken within the context of systematic reviews of evidence about healthcare interventions – drugs, therapies, technologies – the principles of research synthesis remain the same whatever the subject matter under review.

 APPLY WHAT YOU HAVE LEARNT 1.1

How systematic is this review?

As already mentioned, disciplines differ in the extent to which they have adopted systematic approaches to research synthesis. We would like you to identify a review article from within your own subject area or discipline. (You may wish to use an approach similar to that employed by McAllister et al., (1999) namely search for the words 'review,' 'overview,' or 'meta-analysis' in the title or abstract). We want you to make a preliminary assessment of the extent to which your chosen review demonstrates systematic features or principles. To do this we suggest that you construct a grid as in the following example and complete it with your own observations.

- 1 Features that make this review appear SYSTEMATIC
- 2 Features that make this review appear NON-SYSTEMATIC

Your observations will provide a backdrop for the discussion of the importance of systematic approaches to reviewing the literature in Chapter 2.

Key learning points

- All literature reviews should be systematic. They will mainly differ in the degree to which they are systematic and how explicitly their methods are reported.
- Research synthesis has a long pedigree and recent years have seen it spread across multiple fields and disciplines.
- Surveys of research syntheses consistently reveal poor reporting of review methods.
- Evidence based policy and practice has provided a major stimulus to the science of research synthesis.

Suggestions for further reading

- Lomas J. (2007) Decision support: a new approach to making the best healthcare management and policy choices. *Healthcare Quarterly*, **10**, 3, 14–16.
- Randolph, J. (2009) A guide to writing the dissertation literature Review. *Practical Assessment, Research and Evaluation*, **14**, 13. (w160)
- Steward, B. (2004) Writing a literature review. *British Journal of Occupational Therapy*, **67**, 11, 495–500.
- Volmink, J., Siegfried, N., Robertson, K., and Gülmezoglu, A. (2004) Research synthesis and dissemination as a bridge to knowledge management: the Cochrane Collaboration. *Bulletin of the World Health Organisation*, **82**, 10, 778–783. (w199)

References

- Antman, E.M., Lau, J., Kupelnick, B., Mosteller, F., and Chalmers, T.C. (1992) A comparison of results of meta-analyses of randomized control trials and recommendations of clinical experts. Treatments for myocardial infarction. *JAMA*, **268**, 2, 240–8.

- Bem, D.J. (1995) Writing a review article for Psychological Bulletin. *Psychological Bulletin*, **118**, 2, 172–7.
- Britten, N., Campbell, R., Pope, C., Donovan, J., Morgan, M., and Pill, R (2002) Using meta ethnography to synthesise qualitative research: a worked example. *Journal of Health Services Research and Policy* **7**, 4, 209–15.
- Bruce, C.S. (1994) Research students' early experiences of the dissertation literature review. *Studies in Higher Education*, **19**, 2, 217–29.
- Bruce, C.S. (1997) From Neophyte to expert: counting on reflection to facilitate complex conceptions of the literature review, In: Zuber-Skerritt, O. (ed.), *Frameworks for Postgraduate Education*. Lismore, NSW: Southern Cross University.
- Chalmers, I., Hedges, L.V. and Cooper, H. (2002) A brief history of research synthesis. *Evaluation and the Health Professions*, **25**, 1, 12–37.
- Clark, S. and Horton, R. (2010) Putting research into context – revisited. *The Lancet*, **376**, 9734, 10–11.
- Clarke, M. and Chalmers, I. (1998) Discussion sections in reports of controlled trials published in general medical journals. Islands in search of continents? *JAMA*, **280**, 280–2.
- Cooper, H.M (1989) *Integrating Research: A Guide for Literature Reviews*, 2nd edn, Newbury Park, CA: Sage Publications.
- Cooper, H.M., Hedges, L., and Valentine, J. eds (2009) *The Handbook of Research Synthesis and Meta-Analysis*, 2nd edn. New York: The Russell Sage Foundation.
- Damschroder, L.J., Aron, D.C., Keith, R.E., Kirsh, S.R., Alexander, J.A. and Lowery J.C. (2009) Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science*, **4**, 50. (w060)
- Davies, H.T.O., Nutley, S.M. and Smith, P.C. (eds) (2000) *What Works? Evidence-Based Policy and Practice in Public Services*. Bristol: Policy Press.
- Davies, P. (2000) The relevance of systematic reviews to educational policy and practice. *Oxford Review of Education*, **26**, 3–4, 365–78.
- Davies, P., Walker, A.E., and Grimshaw, J.M. (2010) A systematic review of the use of theory in the design of guideline dissemination and implementation strategies and interpretation of the results of rigorous evaluations. *Implementation Science*, **5**, 14. (w061)
- Dunne, C. (2011) The place of the literature review in grounded theory research. *International Journal of Social Research Methodology*, **14**, 2, 111–24.
- Egger, M., Ebrahim, S., and Smith, G.D. (2002) Where now for meta-analysis? *International Journal of Epidemiology*, **31**, 1, 1–5.
- Enkin, M., Keirse, M.J., Renfrew, M., and Neilson, J. (1989) *Effective Care in Pregnancy and Childbirth*. Oxford: Oxford University Press.
- Evans, J. and Benefield, P. (2001) Systematic reviews of educational research: does the medical model fit? *British Educational Research Journal*, **27**, 527–41.
- Fink, A. (2005) *Conducting Research Literature Reviews: From the Internet to Paper*, 2nd edn. London: Sage Publications Ltd.
- Galvan, J.L. (1999) *Writing Literature Reviews*. Los Angeles: Pyrczak Publishing.
- Glass G.V. (1976). Primary, secondary and meta-analysis of research. *Educational Researcher* **10**, 3–8.
- Godin, G, Bélanger-Gravel, A., Eccles, M., and Grimshaw, J. (2008) Healthcare professionals' intentions and behaviours: a systematic review of studies based on social cognitive theories. *Implementation Science*, **3**, 36. (w089)
- Greenhalgh, T., Kristjansson, E., and Robinson, V. (2007) Realist review to understand the efficacy of school feeding programmes. *BMJ*, **335**, 7625, 858–61. (w098)
- Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., Kyriakidou, O., and Peacock R. (2005) Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review. *Social Science and Medicine*, **61**, 2, 417–30.
- Hammersley, M. (2001) On 'systematic' reviews of research literatures: a 'narrative' response to Evans and Benefield *British Educational Research Journal*, **27**, 5, 543–54.

- Hart, C. (1998) *Doing a Literature Review: Releasing the Social Science Research imagination*. Thousand Oaks, CA: Sage
- Lavis, J.N., Davies, H.T.O., Oxman, A.D., Denis, J-L, Golden-Biddle, K., and Ferlie, E. (2005) Towards systematic reviews that inform health care management and policy-making. *Journal of Health Services Research and Policy* **10**, Suppl 1, S35–48.
- LeCompte, M.D., Klinger, J.K., Campbell S.A., and Menke, D.W. (2003) Editor's introduction. *Review of Educational Research*, **73**, 2, 123–4.
- Light R. and Pillemer D (1984) *Summing Up: The Science of Reviewing Research*. Cambridge, MA: Harvard University Press.
- Major, C.H. and Savin-Baden, M. (2010) *An Introduction to Qualitative Research Synthesis: Managing the Information Explosion in Social Science Research*. London: Routledge.
- Mays, N., Pope C., and Popay, J. (2005) Systematically reviewing qualitative and quantitative evidence to inform management and policy-Making in The Health Field. *Journal of Health Services Research and Policy*, **10**, Suppl. 1, 6–20.
- McAlister, F.A., Clark, H.D., van Walraven, C., Straus, S.E., Lawson, F.M., Moher, D., and Mulrow, C.D. (1999) The medical review article revisited: has the science improved? *Annals of Internal Medicine* **131**, 947–51.
- Moynihan, R. (2004) *Evaluating Health Services: A Reporter Covers the Science of Research Synthesis*. New York: Milbank Memorial Fund.
- Mulrow, C. (1987) The medical review article: state of the science. *Annals of Internal Medicine*, **106**, 485–88.
- Mulrow, C.D. (1995) Rationale for systematic reviews. In: Chalmers, I. and Altman, D. (eds) *Systematic Reviews*. London: BMJ Publishing Group.
- Noblit, G.W., and Hare, R.D. (1988) *Meta-ethnography: Synthesizing Qualitative Studies*. Newbury Park, CA: Sage.
- Nutley, S., Davies, H., and Walter, I. (2002) ESRC UK Centre for Evidence Based Policy and Practice: Working Paper 9. Evidence Based Policy and Practice: Cross Sector Lessons from the UK. Research Unit for Research Utilisation. Department of Management, University of St Andrews. August 2002: ESRC UK Centre for Evidence Based Policy and Practice; Research Unit for Research Utilisation.
- Oxman, A.D., and Guyatt, G.H. (1993) The science of reviewing research. *Annals of the New York Academy of Science*, **703**, 125–33.
- Pearson, K. (1904) Report on certain enteric fever inoculation statistics. *BMJ*, iii, 1243–6.
- Petticrew, M. (2001) Systematic reviews from astronomy to zoology: myths and misconceptions. *BMJ*, **322**, 98–101.
- Pope C, Mays N & Popay J. (2007) *Synthesizing Qualitative and Quantitative Health Evidence: a Guide to Methods*. Maidenhead: Open University Press, 13–15.
- Randolph, J. (2009) A guide to writing the dissertation literature review. *Practical Assessment, Research and Evaluation*, **14**, 13. (w160)
- Sweet, M. and Moynihan, R. (2007) Improving population health: the uses of systematic reviews. New York: Milbank Memorial Fund. (w187)
- Trinder, L. and Reynolds, S, (eds) (2000). *Evidence-based Practice: A Critical Appraisal*. Oxford: Blackwell Science.
- Walker, L.O., and Avant, K.C. (2005) *Strategies for Theory Construction in Nursing*, 4th edn. Upper Saddle River, NJ: Pearson Prentice Hall.
- Webster, J. and Watson, R.T. (2002) Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, **26**, 2, 13–23.
- Wilson, P.M., Petticrew, M., Calnan, M.W., and Nazareth, I. (2010) Disseminating research findings: what should researchers do? A systematic scoping review of conceptual frameworks. *Implementation Science*, **5**, 91. (w204)
- Xyrichis, A. and Ream, E. (2008) Teamwork: a concept analysis. *Journal of Advanced Nursing*, **61**, 2, 232–41.