

Guide to Conducting a
Systematic Literature Review
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Literature reviews are inherent to any form of graduate work, be it coursework or research. Depending on one's level of engagement in previous research experience, literature reviews can be intimidating. The expectation at the graduate level in humanities and social sciences is that students are avid readers, capable of independent thought and well equipped to teach themselves. To put it simply while there is significantly more interaction with faculty, scholars and specialists at the graduate level, there is no hand holding.

This guide book is designed to walk students through the steps involved in conducting various types of literature reviews. First and foremost, this document discusses the expectations at the graduate level for producing a literature review. The subsequent sections outline the various types of literature reviews, as well as the differences in methodology and structure.

Expectations:

A literature review is an account of what has been published on a topic by accredited scholars and researchers (Taylor, D., n.d). Professors or supervisors expect a literature review to give them a sense of “What do we know or not know about this issue?” (VCU Libraries, n.d). A literature review may lead to the identification of a gap or controversy in knowledge on a subject that provides an avenue for research. It may also reveal some form of redundancy or overlap in ideas, theories or methodologies, and lead to the recognition of a need for critical review and evaluation. Academicians are often also interested in a systematic review of existing research on a topic that may give them a snap shot of what is current in their field of interest (PVCC, 2015).

The importance of a literature review to a research paper:

The purpose of a research paper is to add to the existing literature within a discipline. A well written paper however, is linked to a thoroughly researched literature review, and with very few exceptions, all research papers published in the field of humanities and social sciences contain a literature review as a standard component. Literature reviews are expected to provide a solid background for the investigation being conducted in a research paper. The idea is that scholars must use the existing literature on the topic as “foundation and support for a new insight” proposed in their research papers (UNC, n.d). Therefore, a literature review aims to “summarize and synthesize the arguments and ideas of others without adding new contributions” (UNC, n.d). A literature review on a research topic will neither support nor discredit a research

hypothesis; though it may provide a rationale for the hypothesis. A well-researched review reflects well on the credibility of the writer and his/her understanding of the existing scholarship in their respective field. Comprehensive knowledge of the literature specific to the topic of interest is essential to most research papers. To only include literature that supports one's own opinion or research hypothesis leads to biased research that holds little or no value for scholars.

Deconstructing the 'summary' myth:

A common misconception about literature reviews is that they comprise of summaries of academic literature on a given subject. This is not true. A literature review organizes and synthesizes existing academic scholarship on a research topic, in the form of numerous subtopics. For example, A literature review of the existing literature on the impact of global warming on the Gulf of California will be organized into subsections with classifications based on; authors who report significant changes in climate along the Gulf, the authors that do not convincingly establish a linkage between global warming and climate change in the Gulf as well as those who deny the possibility of global warming having an effect on the climate of the Gulf region (and any others you may find!). The synthesis and analysis section in the review allows the author to use their judgement to determine the value each argument has to the topic of research (for example, based on research you may find that you do think global warming is a pressing issue, however, literature suggests that it is not a contributor to the climate change in the Gulf region). This is what a sentence in the review comparing the work of two authors may look like:

Sample:

"Researcher A suggests that X is true. Researcher B also argues that X is true, but points out that the effects of X may be different from those suggested by Researcher A"

(Ingram et al., 2006).

The main topic of research in the sample above is X. While both researchers A and B agree on the fact that X is ‘true’, they do not agree on the effects of X. Therefore, even though researchers may have differing opinions or even established theories on any given area of research, the quality of research, and not the argument of the author should determine whether a literature piece is included in the review. In the sample, as long as a piece of scholarly work discusses the topic ‘X’, it qualifies to be included in the literature review (Ingram et al, 2006). On a technical note, inclusion criteria may vary for systematic literature reviews. For example, the criteria may be defined as studies exploring topic ‘X’, published between 2000 and 2015 that employ qualitative methods. This differentiation is discussed in depth in later sections of this guide.

Optimal outcomes:

Literature reviews are often constrained by time and page limit. The best idea is to ask the professor assigning the review for some form of a research criteria or guidelines¹. Some topic areas have a larger body of literature than others, and depending on the area of focus, it may be wise to make the research topic more specific. For example, ‘social movements’ are the subject of thousands of books and articles, ‘social movements in health’ are more specific and will lead to a narrower search criteria.

Starting Out – The make-up of your research topic:

The Paper Trail:

“A paper trail is a record of lists and notes to help in planning and in keeping track of what you have done as you review the literature on a particular topic; it is a method of documenting your research for relevant materials. [...] It is a map of where you are going and a diary of where you have been in your search for source documents” (Garrard, 2007, pp.64).

This ‘trail’ is imperative to good research not merely to keep oneself organized, effective and to avoid repletion, but also to ensure that a literature review produced by one researcher can be replicated by another (this is particularly true for systematic reviews). A paper trail may be

¹ When looking at journal articles, it is particularly important for graduate students to take particular notice of those that are relevant to their topic of research. This can help get a sense of the guidelines for journals one hopes to publish in. Every journal also has ‘guidelines for authors’ that outline types of research articles accepted (a journal may not publish literature reviews at all!), acceptable length for each type of article as well as formatting requirements for submission of manuscripts.

created by using a paper management system such as Mendeley, Papers, Qiqqa, Zotaro and Sente². These programs keep track of all documents along with the date added (also imperative to a thorough bibliography), and allow for direct citation plugins for Microsoft word in the chosen citation format. Any comments relevant to specific papers also appear side by side when an article is later accessed.

Selecting Sources

A key variable in writing a good literature review is developing an understanding of research databases one expects to use. This knowledge is not inherent to any graduate student; however, it can be quickly developed if the paper trail is diligently maintained (Garrard, 2007). Since most students have access to their university's digital libraries, a good start is to search for the concept in the digital library, take note of which journals most frequently publish relevant articles and specifically search those journals.

During the initial few searches, whether the search key words need to be more general, specific or used in combination with other words becomes apparent. Relevant articles and their citation should be utilized to identify authors who may have other publications in the same field. Key words used to tag these articles may also be included in further research for greater relevance. This 'snowball technique' can also be used to identify references from articles or sources not very relevant to the topic of research (Garrard, 2007). Depending on the scope of the literature review, references may be added to this list until relevant articles seem to be recurrently appearing in the literature being reviewed (Garrard, 2007). Lastly, the probability that a literature review on the topic being researched has previously been published is high, and may prove to be a useful resource (Pautasso, 2013).

Other important sources of literature are "grey literature" which comprises of publications such as papers presented at scientific meetings, preliminary reports, technical reports or government documents and reports (Garrard, 2007, pp.83). This literature is often difficult to obtain, however, can be cited as a credible source of information (Garrard, 2007). Another important resource to identify research articles related to the topic of interest is

² Mendeley, Zotaro and Qiqqa are windows compatible and free to download. Papers is not free, but comes with a free trial period and Sente is only compatible with Macs and OS)

bibliographic databases³. These databases make identifying relevant articles easy and less time consuming by allowing access to the basic citation information and abstract without downloading the article. Research repositories⁴, and data banks managed by international bodies such as the World Health Organization or the World Bank are also important resources for up to date information. Repositories host documents/publications/reports and other literature formats and must be utilized with caution since much of this data is open access.

Selecting Keywords:

Often, when students key in a question or a normative statement about the topic they wish to investigate, the search results are excessively filtered out (for example, “can capital punishment reduce crime?”). Therefore, the first step to an inclusive, comprehensive literature review is the identification of key words that describe the research topic. These key words may change, take on a normative edge, or expand to include other terms at a later stage during the review writing process. In the above example discussing the impact of global warming on the Gulf of California, key words may include ‘impact’, ‘global warming’ and ‘Gulf of California’. As the reviewer reads on, an increasing number of scholarly articles may mention ‘marine life’, ‘wildlife’, ‘drought’ and ‘fires’. These words may then be included in the key words used for the search. The steps of this process have been identified by the De Montfort University Library (2013) and are listed below:

- Start by using key words that are specific to the topic of research. Using commonly used words may yield a very long list of search results. For a literature review, from a reading perspective, the most relevant scholarship specific to a subject should take precedence.
- Research databases identify relevant literature by matching the key words identified by authors to the key words used during the search. Searching for synonyms and similar words to the original key words will produce a difference range of scholarly work which may also qualify as relevant literature on the subject. (For example; “health disparities,” “health equity,” “health inequalities,” “differences [in] health outcomes” all relate to the same topic of research).

³ Proquest is a popular bibliographic database. In addition, the link below provides a comprehensive up dated list of available bibliographic databases organized by field of study:

<http://www.ccpr.ucla.edu/services/information/bibliographic-databases-online>

⁴ <http://roar.eprints.org/>

- Variations in spelling may lead to excessive filtering. If the selected key words are known to have variations in spelling, a search engine may not automatically pick up on that. Using all spelling variations will help make the search more comprehensive. (For example, “Labour Rights” and “Labor Rights” or “Program” and “Programme”). The same principle applies to searching for singulars and plurals as well as combining terms. (For example, Health disparity, Health disparities, Health and disparities). ‘Or’ and ‘Not’ are also useful when using a combination of words (for example international ‘or’ global health, literacy ‘not’ education).
- Abbreviations or symbols can be used to search databases but may be limiting (De Montfort University, 2013).

Using Controlled Vocabulary

Entering key words into a database often yields results that may comprise of literature that is not specific or relevant to the topic being researched. Controlled vocabularies comprise of keywords that are assigned to articles by authors or database compilers, and help identify articles with a central focus on the topic of research as opposed to articles that just contain these words. Using controlled vocabularies⁵ is beneficial when keyword search is either too specific or yields limited results. It is also useful in expanding the research included in the review beyond specific concepts. Ideally, a mixture of these two methods is crucial to drafting a comprehensive literature review. Since the controlled vocabulary feature is developed by the database managers, it is thorough, yet specific to the area of interest one is researching. For example, in the screenshot below, if a researcher knows Wiley Online to be a database that carries scholarly literature relevant to ‘Nursing, Dentistry and Healthcare’, and searches the topic, Wiley Online automatically provides various subcategories to select from (Figure a). Once a sub category has been selected, options to search within the broader area of study under ‘topics’ are presented. Once a Topic has been selected (Figure b) ‘Health Care Professional development and Education’ all journals hosted by Wiley Online relevant to this topic area will appear. The yellow unlock symbol appears in front of those journals or books that can be accessed by the user

⁵ For an explanation of how controlled vocabularies facilitate research, refer to this link: <https://www.nlm.nih.gov/bsd/disted/video/>

(Figure c). (Links on browsing within journals using the search bar and using advanced searchers are provided at the bottom of this page⁶).

Controlled vocabularies are useful when one's research topic pertains to a specific topic, condition or phenomenon, for example; recent trends in global health governance. In some instances, even using advanced searches and applying multiple 'filters' to the search within a database, there is a plethora of information that cannot be read or referenced in a reasonable time frame. This may be the case because a very large amount of literature has been generated on the said topic of research or because the topic of area overlaps with other areas of study. Using precise search topics, picking out the most relevant and high impact journals and limiting search results to a specific time frame and region (or country) can narrow down the search results significantly. Vice versa, if the search generates very few results, the problem may be specificity. In that case, a more generic terminology describing the area of interest might be helpful. Furthermore, controlled vocabularies might be a good technique to try and expand the research topic, as well as find related topics.

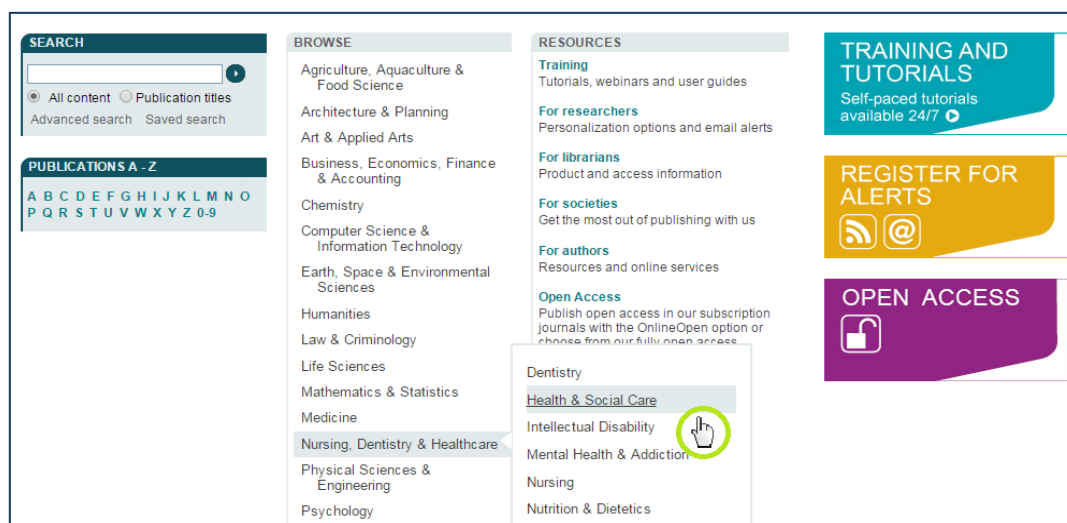


Figure a. Wiley Online Home Page

⁶ <https://www.brainshark.com/wiley/WOL2> - browsing inside a journal
<https://www.brainshark.com/wiley/WOL4> - Browsing by topic and advanced searches



Figure b. Wiley Online – Sub Category Search

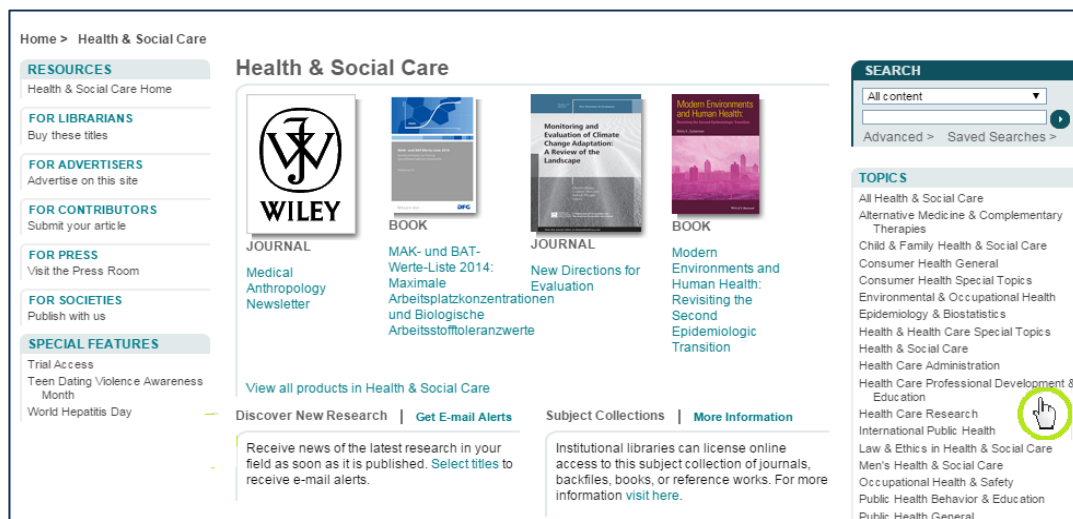


Figure c. Wiley Online - Topic searches

Reviewing and Re-reviewing:

The checklist:

Key words, specific subject areas, journals, and articles reviewed must at some point be logged into the paper trail software/paper record in a chronological systematic manner. In order to make sure that a thorough search has been conducted and one has not simply digressed from

the topic of research, the following checklist drafted by Jesson, Matheson and Lacey (2011) can prove to be useful:

- Have I searched all the appropriate sources?
- Are there any gaps in the information sources searched?
- Have I used complex search statements as required by individual databases?
- Could any improvements be made to the searches?
- Have I identified all the relevant references?
- Have I used both full text and bibliographic databases? (*Jesson, Matheson & Lacey, 2011*)

Depending on the purpose, scope and volume of literature found on the topic of research, exclusion criteria must be defined to weed out the literature that is not required for the desired synthesis. Exclusion criteria may include time limits, geographical boundaries, language, subject area covered and methodological limits (these criteria can then be described in the review to help define its scope) (Jesson, Matheson & Lacey, 2011).

Reading for the Literature Review

Two popular reading techniques can facilitate the daunting task of reading for a literature review; EEECA (Examine, Evaluate, Establish, Compare and Argue) and SQ3R (Survey, Question, Read, Write and Review). These have been the subject of numerous web sources, articles and books⁷. This section of the guide focuses on ‘The Matrix method’, a method of abstracting relevant information from the literature on a research topic by classifying it into a series of subtopics as a means of systematically organizing the layout of the synthesized literature review. This method employs the use of a review matrix, which can essentially be a table in MS word, an excel spread sheet, or a notebook. Depending on whether the said review is meant to lead to a thesis or dissertation, or is required for a course or a work assignment, the matrix method allows for the development of an annotated bibliography as a supplemental record of the reviewed literature.

⁷ Jesse, Matheson and Lacy, (2011) is a good reference for a simple description of the EEECA and SQ3R reading techniques. SQ3R resources can be found at <http://www.adlit.org/strategies/19803/>

“Reading for reviews differs from reading for pleasure as it requires the reader to distil relevant information and unravel the reasoning”

(Bloomberg et al., 2005)

The Review Matrix:

The purpose of a review matrix is that it provides a standard structure for creating order. This order helps separate the relevant information from the irrelevant literature and provides the opportunity for the researcher to critically analyze the collected information and use it efficiently (Garrard, 2007). This is of particular importance when the review is leading into the investigation of a particular research question. A lengthy literature review may not necessarily be thorough (and vice versa). Literature reviews become narrow and repetitive when authors identify a few common themes that run across the literature on the subject and build an argument around them. A well-organized literature review allows for a structured synthesis that reduces significantly the chances of redundant commentary. In this case, the matrix method allows for the author to recognize the need for a broader research criterion in a timely manner so as to add to his/her pool of resources.

The first step to a well-structured matrix is the identification of important common themes. For this purpose, six to twelve articles that describe or explore the main cross cutting themes of the discipline could serve as the foundation of the research. A basic template is shown in the following table. Further columns must be added to make the template more specific to the purpose and scope of the literature review. For this template, examples of additional columns/themes include: Conceptual discussion of Global Health, Global Health epidemiology, Global Health Finance etc.

Table 1.1 – A Review Matrix Sample

	Author(s)/ Year	Title/Journal	Purpose of study/ research setting or intervention	Type of Study/ Methodologi cal Design	Results/ Conclusions OR outcome variables	Implications for practice research, Theory or selected Findings	Limitations/F laws
1	Frenk, J., & Moon, S. (2013)	Governance Challenges in Global Health. <i>New England Journal of Medicine</i>	Understanding governance in Global Health systems. Challenges to and Functions of global health are discussed.	Descriptive /investigativ e/theoretical discourse	Challenges presented by health inequity and national government to cooperation on global health must be overcome for effective outcomes.	Organizations such as the WHO have limited effectiveness and are constrained for time and resources. Renewed focus on and commitment to global health is needed.	Limited in scope. Broad theoretical examples. No mention of evolving nature of transnational organizations
2							
3							

The matrix table not only allows for the organization of concepts, themes and subtopics but also the broad sources of publication. For example, repeating authors, publication journals or institute of affiliation may be worth exploring for more relevant data sources. In case of empirical or policy impact studies, it is important identify if researchers have used the same datasets (and gotten different results because of their respective methodology) or are analyzing the same programs or interventions (and arriving at different conclusions as to their success or failure!).

Annotated Bibliography:

The review matrix at this point can be turned into an annotated bibliography, which by definition is a full citation of an article/book source/website/government document (etc.) on a particular topic of research followed by a “brief descriptive and evaluative paragraph [and] an annotation. The purpose of the annotation is to inform the reader of the relevance, accuracy, and quality of the sources cited.” (Cornell University Library, 2015). The explanatory paragraph is

generally no longer than 150 words; however this may vary with the purpose for which the bibliography is being compiled.

Synthesizing a Literature Review:

Use of Secondary sources:

Most academic papers today include a brief literature review of existing authorship on the research topic. Often, this is in summary form to identify what areas of that research subject are lacking, why the following paper is relevant and how it contributes to the scholarship in that discipline. These sections of the academic scholarship must be interpreted with caution. The best course of action to ensure accuracy is to consult the original source of the information before including it into the review. If a seminal finding in the discipline (for example principle of reverse causation in epidemiology and public health) has been summarized and presented in an existing literature review, it is important to add the primary author of the literature embodying the finding to the review matrix, so that quoting from a secondary source can be avoided (Jesson, Matheson & Lacey, 2011).

Organizing Ideas to Write:

The Literature review must be clearly organized in a logical manner with headings and sub headings. It should introduce the broader topic, its relevance and application as well as point to any gaps in literature or shortcomings of existing research. The subtopics or subfields must be introduced in an organized, easy-to-follow fashion. The scholarly work discussed under these sub headings must be characteristically analytical as well as comparative in its presentation.

Analytical Work:

The fact that writers are citing scholarly work does not exempt them of the scholarly responsibility to analyze the claims made in any publication. The limitations identified in the review matrix must be well thought out and discussed. If such criticisms exist in the form of other scholarship (theories are often debated on between authors and critics through academic papers), the criticisms must be referenced.

Comparative work:

Literature reviews often employ the use of a series of ‘signaling words’ that flag agreement, disagreement, criticism or conclusive analysis in literature. A sample of these words is provided by Jesson Matheson and Lacey (2011) and is itemized below:

Similar options: Similar, equally, likewise, in the same way

Strengthening words (words that strengthen an argument): in addition, besides, too, moreover, furthermore, it is different, not only, but also.

Alternative words (Words that argue against something): others argue that (always give a reference source for the others), alternatively, it might/could be argued that.

Rebuttal words: However, on the other hand, nonetheless, notwithstanding

Contrast or contradict words: although, conversely, by contrast, on the one hand, on the other hand.

Results and Consequences: as a result, as a consequence, hence, thus, consequently, because of this.

Concluding words: Therefore, in conclusion, thus, we can see that (*Jesson, Matheson & Lacey, 2011*).

Writing the Literature Review:

To author a literature review, one must be able to differentiate between the specific characteristics of a traditional review, a systematic review and a meta-synthesis. This guide outlines the basic differences and steps involved in writing a traditional and a systematic literature review.

Traditional Review:

“The traditional review [...] aims to be comprehensive so as to present a summary review of the current state of knowledge about a particular subject” (Jesson, Matheson & Lacey, 2011, pp. 74). Traditional reviews are reflective of the author’s subjectivity. They do not follow a protocol and often do not include a description of how the review was carried out. The reader of a traditional review, if not previously informed on the topic of research, is often unable to judge

if the arguments presented in a review provide a holistic overview of the literature on the subject⁸. Traditional reviews are more commonly expected at the undergraduate level, and may not be the best method of accumulating literature on a topic of study to lead into a thesis or dissertation writing (Ask your advisor!). Critics of traditional literature reviews posit that the non-scientific nature of the review makes it of little use in scientific study. The expectations associated with the complexity and comprehensiveness of the review vary depending on the purpose of the review and level of study. However, because there is no systematic protocol, an uninformed reader has no way of knowing if the review provides an accurate snapshot of all existing literature, and if not, to what extent was the selection of literature based on the author's personal discretion. Jesson, Matheson and Lacy (2011) articulate the criticism as follows:

“In a traditional review, the author's subjectivity is implicit; there is no protocol and quite often no description of how the review was carried out” (Jesson, Matheson & Lacy, 2011, pp.74)

To start writing a simple traditional review, one may start with three contrasting papers that discuss contrasting concepts linked closely to the main topic of discussion. This can be done in the form of a summary paragraph for each individual article. In the next step, these three paragraphs are combined to obtain a synthesized comparative description of theoretical concepts and arguments presented in three academic papers. As more papers are read and analyzed, they can be added in support of, in contrast to or in addition to the three initial theoretical frameworks, further going on to delineate methodologies, findings and finally, limitations (Jesson, Matheson & Lacey, 2011). The review usually concludes with a discussion and critical summary paragraphs, reflective of the authors own understanding of the literature reviewed, an analysis of the value attached to the existing scholarship on the subject and the identification of further avenues for research.

⁸ Additional types of literature reviews include critical reviews, conceptual reviews, state of the art reviews, expert reviews and scoping reviews. The use of each of these reviews is specific to fulfilling a specific scholarly task. Unless asked to conduct one of these, one does not necessarily need to know exactly what these are or how to go about them.

Systematic Review:

The difference between a traditional and systematic review can be visualized on a continuum:



A systematic review focuses on the methodology as well as the output. Systematic reviews are expected to provide a “systematic, transparent means for gathering, synthesizing and appraising the findings of studies on a particular topic or question. The aim is to minimize the bias associated with single studies and non-systematic reviews.” (Sweet & Moynihan, 2007, pp.1). In addition, this methodological diligence must yield a ‘research article that identifies relevant studies, appraises their quality and summarizes their results using scientific methodology’ (Kahn et al., 2003). Systematic reviews are considered to be the gold standard for research study designs, and therefore require a rigorous evaluation criteria and analysis of literature (Jessey, Matheson & Lacey, 2011).

The process of conducting a systematic review starts with the identification of specific aims and objectives, as well as a particular research question. It is narrowly focused on a field or subfield of study and does not expand to include connecting ideas but has a predetermined exclusion and inclusion criteria for literature accumulated. The process of identifying and including academic literature is transparent and is often conducted in the form of a documented audit trail. All academic literature found on a specific area of study is scanned to check if it meets the inclusion criteria for the review. A systematic review requires that the studies included in the review meet a certain predetermined criteria for methodological quality, and, to reiterate this for emphasis, the review itself must have a structured methodology that is transparent to the readers (Jesson, Matheson & Lacey, 2011).

Methodology:

In order to write a good systematic review, the key is to have a specific research question, bounded by space, time and target population/subgroup. For example in order to design a review of the recent studies on the impact of global warming, one must specify if the impact will be studies on a global, national or regional level. Similarly, will studies published before 1990 (or any specific time period) be included in the review. The methodology of the review is rigorous and time consuming, which is why systematic reviews are often conducted by a team of multiple authors as opposed to a single author. In this stage of the review, a paper trail is crucial. The details of each database used must be recorded, in addition to the dates that these searches were conducted (to ensure academic literature added after that date does not compromise the integrity of the review). Furthermore the years (time period covered), search terms (keywords) language restrictions, and number of hits for each search must be exhaustively documented.

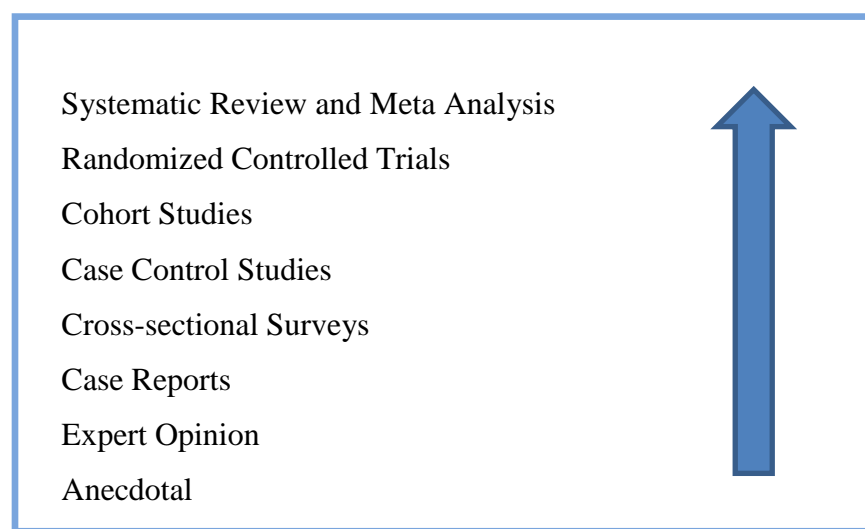


Figure 1.1: Hierarchy of research study design

Selecting and Analyzing the Literature:

The articles included in the systematic review must lead to the researcher being able to answer the research question under study. In order to select the relevant material, the basic criteria may involve the identification of the literature pertinent to the topic of research. This can be done by reading the Title and Abstracts (perhaps introduction and Conclusion) of the articles to determine if they are relevant to the topic of research. Once this has been done for all literature that was identified through electronic or other sources, a more concrete inclusion and exclusion

criteria can be established. This criteria can then be applied while reading the full paper and documenting the reasons for excluding material, a process known as ‘Quality Assessment’ (Jesson, Matheson & Lacey, 2011). During this phase, it may be useful to establish a hierarchy of research study design in collaboration with other researchers or supervisors. An example of a standard hierarchy for health-related research is provided below:

Quality Assessment:

Assessment of Quantitative Studies may be done using the following checklist:

Introduction:

Are the aim and objectives of the study clear?

Why was the study undertaken?

Why in this context?

Method:

What is the research design?

Is there detail about the sampling frame, how and why the sample was selected?

Data:

What types of data are there?

How, where and by whom was the data produced?

How trustworthy, reliable and worthy is the data?

Analysis:

How was the data analyzed?

How rigorous and trustworthy is the analysis?

Results:

Are the results a true representation of the data?

Do the results relate back to the research question?

Do the authors discuss the methodological limitations of their study?

(Source: Jesson, Matheson and Lacey, 2011)

Qualitative data may be analyzed using the Consolidated Criteria for Reporting Qualitative Studies (COREQ) designed by Tong et al. (2007). This checklist was designed by drawing on 22 published checklists used to assess or review qualitative studies selected from all major academic databases. The criteria included in the checklist can help researchers to identify and important criteria for inclusion in the literature review based on the characteristics of the research team, methodology of the study, analysis, findings and interpretation (Tong et al., 2007). This checklist has been widely used in academia and has been described as a useful research tool for narrative and systematic reviews (Porok et al., 2013; Morton et al., 2010).

Domain 1: Research team and reflexivity

Personal Characteristics

1. Interviewer/facilitator: Which author/s conducted the interview or focus group?
2. Credentials: What were the researcher's credentials? E.g. PhD, MD
3. Occupation: What was their occupation at the time of the study?
4. Gender: Was the researcher male or female?
5. Experience and training: What experience or training did the researcher have?

Relationship with participants

6. Relationship established: was a relationship established prior to study commencement?
7. Participant knowledge of the interviewer: What did the participants know about the researcher? e.g. personal goals, reasons for doing the research.
8. Interviewer characteristics: What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic

Domain 2: study design

Theoretical framework

9. Methodological orientation and Theory: What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis

Participant selection

10. Sampling: How were participants selected? e.g. purposive, convenience, consecutive, snowball
11. Method of approach: How were participants approached? e.g. face-to-face, telephone, mail, email

12. Sample size: How many participants were in the study?

13. Non-participation: How many people refused to participate or dropped out? Reasons?

Setting

14. Setting of data collection: Where was the data collected? e.g. home, clinic, workplace

15. Presence of non-participants: Was anyone else present besides the participants and researchers?

16. Description of sample: What are the important characteristics of the sample? e.g. demographic data, date

Data collection

17. Interview guide: Were questions, prompts, guides provided by the authors? Was it pilot tested?

18. Repeat interviews: Were repeat interviews carried out? If yes, how many?

19. Audio/visual recording: Did the research use audio or visual recording to collect the data?

20. Field notes: Were field notes made during and/or after the interview or focus group?

21. Duration: What was the duration of the interviews or focus group?

22. Data saturation: Was data saturation discussed?

23. Transcripts returned: Were transcripts returned to participants for comment and/or correction?

Domain 3: analysis and findings

Data analysis

24. Number of data coders: How many data coders coded the data?

25. Description of the coding tree: Did authors provide a description of the coding tree?

26. Derivation of themes: Were themes identified in advance or derived from the data?

27. Software: What software, if applicable, was used to manage the data?

28. Participant checking: Did participants provide feedback on the findings?

Reporting

29. Quotations presented: Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e.g. participant number

30. Data and findings consistent: Was there consistency between the data presented and the findings?

31. Clarity of major themes: Were major themes clearly presented in the findings?

32. Clarity of minor themes: Is there a description of diverse cases or discussion of minor themes? (Tong et al., 2007)

Webpages are often tricky to evaluate in terms of accuracy and reliability of information. Cornell University Library provides the “Five Criteria for Evaluating Websites”⁹, a reliable method of ensuring that the information included in the literature review has valid sources.

Synthesis:

Once this information has been collected, it can be recorded into the Review Matrix (see Table 1.1, Page.12) for each piece of literature reviewed. The synthesis of the systematic review includes the narrative and the tabulated summary and findings of each article/book chapter/working paper (etc.) reviewed. The steps involved in both of these phases have been discussed in depth in earlier sections of this guide, and are depicted in the figure below. The synthesis involves comparison of themes, methods, controversies and conclusions presented by the authors. It is also important to clarify (see ‘comparative work’, page 14) when and how studies being analyzed relate to one another (for example, similar dataset, same research questions, similar population setting etc.) (VCU Library, n.d.).

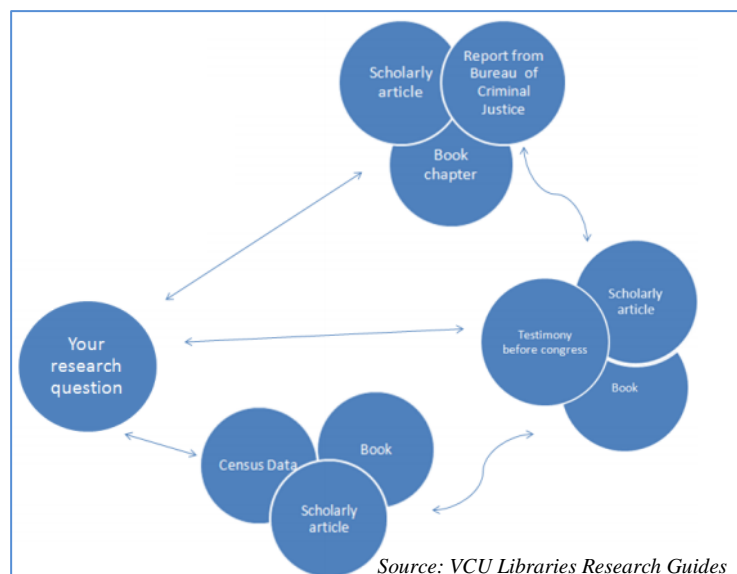


Figure 2.1: Synthesizing a Literature Review

⁹ The Five Criteria for evaluating websites can be found at: http://guides.library.cornell.edu/evaluating_Web_pages

Conclusion

Literature reviews are the primary building block for research in any discipline, and more so in the social sciences. For graduate students, research must be grounded in theory, and built on previous findings in the discipline. However, it must be understood that while a literature review must be comprehensive, it must not be drafted as a summary or a “thinly disguised annotated bibliography” (Hart, 1998, pp. 1). There is a lack of common understanding among researchers with regards to how a review of literature on a particular topic must be done. Standards of *quality* reviews are ambiguous at best and vary across disciplines and levels of study. The purpose of this guide is to provide researchers with a set of rules, assumptions and methods that may serve to broaden their capacity to absorb a wide array of academic literature and reproduce it as a synthesized, holistic briefing manual on the subject of research.

While this guide embodies the instruments that can be used to produce a quality review of literature, it is not the only tool needed to pursue scholarly work. Among other things, while this guide touches briefly on reading methods and writing tools, for those who are new to academia, the writing center at the University of Delaware is a useful resource for skill building and practice. The Department of Professional and Continuing studies also offers courses in ‘Speed Reading and Study Strategies’. The University Research office provides important web resources and training sessions for students to conduct research¹⁰. For graduate students, the UD graduate office provides detailed instructions, guidelines and a preformatted template for thesis and dissertation writing. In addition, an important resource is the Library research office, where Michael Gutiérrez, the School of Urban Affairs and Public Policy reference librarian and research liaison, can be contacted at [mgutierr@udel.edu](mailto:mgutierrez@udel.edu). Lastly, reiterating the most important aspect of doing research within the academic domain; consult your advisor/supervisor at every turn, and heed their advice on resources and methods of research.

¹⁰ <http://www.udel.edu/research/training/>
<http://www.udel.edu/research/training/training-calendar.html>

Interactive Resources:

<http://libraries.adelphi.edu/research/tutorials/EdLitReview/content/module1/05.html>

<https://www.youtube.com/watch?v=2IUZWZX4OGI&feature=youtu.be>

<https://www.youtube.com/watch?v=UoYpyY9n9YQ&feature=youtu.be>

<http://www.lib.ncsu.edu/tutorials/litreview/>

Bibliography:

- Cornell University Library. (2015). Library Research at Cornell: The Seven Steps. Retrieved from: <http://guides.library.cornell.edu/sevensteps>
- De Montfort university. (2013). How to undertake a literature search and review. *De Montfort University Library and Learning Services*. Pp.1–8. Retrieved from <http://www.library.dmu.ac.uk/Images/Howto/LiteratureSearch.pdf>
- Garrard, J. (2007). Health Sciences Literature Review Made Easy – The Matrix Method. Second edition. Jones and Bartlett Publishers, Massachusetts. ISBN:978-0-7637-4004-7
- Hart, C. (1998). The Literature Review in Research In Doing a Literature Review. Sage Publications. ISBN: 9780761959755
- Ingram, L., Hussey, J., Tigani, M., Hemmelgarn, M., & Huneycutt, S. (2006). Writing A Literature Review and Using a Synthesis Matrix, pp. 5. *North Carolina State University, Writing and Speaking Tutorial Service*. Retrieved from <http://tutorial.dasa.ncsu.edu/wp-content/uploads/sites/29/2015/06/synthesis-matrix.pdf>
- Jesson, J.K., Matheson, L. & Lacey, F.M. (2011). Doing your Literature Review, Traditional and Systematic Techniques. Sage Publications. ISBN:978-1-84860-154-3
- Khan, K. S., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five steps to conducting a systematic review. *Journal of the Royal Society of Medicine*, 96(3), 118–121. Retrieved from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC539417/pdf/0960118.pdf>
- Morton, R. L., Tong, A., Howard, K., Snelling, P., & Webster, A. C. (2010). The views of patients and carers in treatment decision making for chronic kidney disease: systematic review and thematic synthesis of qualitative studies. *BMJ : British Medical Journal*, 340, c112. <http://doi.org/10.1136/bmj.c112>
- Pautasso, M. (2013). Ten Simple Rules for Writing a Literature Review. *PLoS Computational Biology*, 9(7), 7–10. <http://doi.org/10.1371/journal.pcbi.1003149>
- Piedmont Virginia Community College (PVCC). (2015). How to write an Academic Research Paper. Retrieved from <http://libguides.pvcc.edu/c.php?g=282626&p=1883086>
- Prorok, J. C., Horgan, S., & Seitz, D. P. (2013). Health care experiences of people with dementia and their caregivers: a meta-ethnographic analysis of qualitative studies. *CMAJ : Canadian Medical Association Journal*, 185(14), E669–E680. <http://doi.org/10.1503/cmaj.121795>
- Sweet, M., & Moynihan, R. (2007). Improving Population Health : The Uses of Systematic Reviews. *Milbank Memorial Fund*. New York. ISBN 978-1-887748-68-1. Retrieved From:

<http://www.milbank.org/uploads/documents/0712populationhealth/0712ImprovingPopulationHealthFinal.pdf>

Taylor, D., & Procter, M. (2008). The literature review: a few tips on conducting it. *Writing Support, University of Toronto*. Pp. 4–5. Retrieved from <http://www.writing.utoronto.ca/advice/specific-types-of-writing/literature-review/>

University of North Carolina, Chapel Hill. (n.d.) Literature Reviews. *UNC College of Arts and Sciences, The Writing Center*. Retrieved from: <https://writingcenter.unc.edu/files/2012/09/Literature-Reviews-The-Writing-Center.pdf>

Virginia Commonwealth University Libraries Research Guides. (n.d.) Write a Literature Review. Retrieved from http://guides.library.vcu.edu/ld.php?content_id=1720470