

## CHAPTER 4

# CONDUCTING AND WRITING LITERATURE REVIEWS

## INTRODUCTION

To contribute new knowledge to a field of study, students must first establish a comprehensive understanding of existing knowledge. For Holbrook, Bourke, Fairbairn, and Lovat (2007), “The use and application of the literature is at the heart of scholarship—of belonging to the academy” (p. 346). It is the foundation on which the entire thesis rests. However, many students, despite having written many course papers, have no idea of how to write the literature review or even where to start. This chapter explains the goals and purposes of literature reviews and distinguishes types of reviews. It describes how to assess the appropriateness of literature and the steps students take to write the review. It concludes by outlining common mistakes students make when writing literature reviews.

### *Types of Literature Reviews*

This section introduces four ways existing literature is used in research: an annotated bibliography, a literature review, a meta-analysis, and a meta-synthesis. All rely on existing published research, but each serves a different purpose.

*An annotated bibliography* provides a list of sources for additional reading on the subject. It is usually written as a series of paragraphs, each summarizing a single book or publication, followed by a brief assessment (Jesson, Matheson, & Lacey, 2011). Each summary contains the author’s central claims, research questions, and methods used to answer the questions. The sources are arranged alphabetically so they can be easily located for future use. Annotated bibliographies can list potential sources for the literature review.

*Literature reviews* differ from annotated bibliographies in that the information gleaned from the literature is integrated into paragraphs, and compares and contrasts the findings of the sources. As a chapter, a literature review usually begins with an introductory statement outlining the research

question. Ridley (2012) posits that a literature review is both a process and a product. As a process, it involves systematically searching databases for the most current and relevant literature written about the research topic. Kamler and Thomson (2006) note that the word “literature” evokes notions of high culture and instead suggest that it might be more beneficial to think of the process as a review of research. They also question the word “review” which they hold as indicating an onlooker’s stance. Instead, they recommend thinking of the process as one that uses or evaluates previously published research.

As a product, the literature review is a written synthesis of what is known about the research topic and provides supporting evidence for the thesis. It is essential for doctoral work that must demonstrate an original contribution to knowledge. For the master’s student, the literature review situates the proposed research within the context of other research being conducted in the field. “Finding the gap” is a commonly used metaphor describing the student’s task, but this is not easy or obvious. Rather, the literature review indicates what is known and what is yet to be known. Often, students use existing literature to identify problems, justifying the need for their proposed research.

Students must do more than describe the existing literature. Their task is to evaluate the research conducted about their thesis topic and integrate it into their own research. For Randolph (2009), the steps used to conduct and write a literature review mirror the research process. Students start by formulating a question that the literature will answer. They gather data in the form of literature to answer the question, and assess the quality of the evidence found. Finally, they write an analysis and interpretation of the data.

A *meta-analysis* is both an extensive literature review and a quantitative research method that seeks new knowledge from existing data (Crombie & Davies, 2009). The researcher statistically combines the results from several published papers that report findings from independent quantitative studies addressing the same question. Sometimes referred to as a “systematic review,” meta-analyses are frequently used in medicine where several researchers working independently conduct small clinical trials to determine effectiveness of certain treatments.

Meta-analyses require a systematic review of existing literature and researchers must take great care to find all relevant studies on the topic, both published and unpublished. This is sometimes referred to as an “exhaustive search.” Additionally, researchers must accurately assess the methodological quality of each study. If an original study is flawed, then the meta-analysis

may be flawed as well, a problem referred to as the GIGO principle: “garbage in, garbage out” (Crombie & Davies, 2009, p. 7). A meta-analysis requires that researchers develop a comprehensive search strategy, involving several electronic databases. Crombie and Davies also recommend manually searching a number of key journals to check the references of the papers used for the analysis.

A *meta-synthesis* is the qualitative equivalent of a meta-analysis in that researchers combine the findings of other qualitative studies to develop new understandings of the research topic and to generalize the findings. This method of research is relatively new, and contested. Generalizing from a single qualitative study is not useful, nor is this the original purpose of a single study. Zimmer (2006) outlines three purposes for a meta-synthesis: theory building, theory explication, and theory development (p. 313). In conducting a meta-synthesis, the researcher brings together a number of studies to produce a more comprehensive understanding of the phenomena being studied (Walsh & Downe, 2005) which allows researchers to generalize their findings (Zimmer, 2006). Not all agree about the merit of this method, arguing that combining several studies destroys the original intent and integrity of each individual study. They argue that the purpose of a qualitative study is to bring a depth of understanding to a single issue, and that the researcher’s goal was not to generalize his or her findings (Zimmer, 2006). Others disagree and question the value of producing a single, non-reproducible study. Walsh and Downe (2005) posit the argument for combining findings stating, “...if they continue to produce non-reconcilable islands of knowledge around the same phenomena, they are doomed to irrelevant speculation and to reinventing the wheel” (p. 205).

Students who conduct a meta-analysis and meta-synthesis must guard against publication bias because journals often do not publish studies, as in the case of medical journals, that find no benefit for treatment (Crombie & Davies, 2009). Rothstein, Sutton, and Borenstein (2005) explain that a bias is a term for “what occurs whenever the research that appears in the published literature is systematically unrepresentative of the population of completed studies” and warn that, as a result, those conducting the meta-analysis are “in danger of drawing the wrong conclusion about what the research shows” (p. 1). Qualitative research can also be victim of a publication bias. Petticrew et al. (2008) reviewed the abstracts of qualitative research presented at conferences and found, “Qualitative studies that do not show clear, or striking, or easily described findings may simply disappear from

view” (p. 553). In my field, researchers tend to publish success stories, but not failures.

### *Locating and Evaluating Research*

Machi and McEvoy (2012) posit that the literature review is “a written argument that promotes a thesis by building a case from credible evidence based on previous research” (p. 2). Credible is the key word here. Students’ task, whether writing for the proposal or the final thesis, is to demonstrate they can separate what is valuable and pertinent from what is not. The fact that a paper has been published does not guarantee its credibility or its usefulness. In most disciplines, credibility is established through the peer-review process, also called “refereed.” Peer reviewing consists of the paper being evaluated and approved by two or three reviewers chosen for their expertise in the subject or methodology. Blind peer-review means that neither the reviewers nor author know each other’s identity. Peer-review is a discipline’s self-regulation process intended to ensure some form of quality control. Most peer-reviewed journals indicate their status on the inside cover, also identifying the editor and listing members of the review board and their university affiliations. Some journals publish instructions to potential authors, specifying their review policies. However, peer-review is an imperfect process. In small fields or niche journals, reviewers can guess the author’s identity with a fair amount of accuracy. Reviewers can be biased for or against authors and ideas. Some reviewers are more demanding and scrutinize papers more closely than others. (For a more detailed discussion about the power and politics of the peer-review process, see Chapter 9).

There are increasing numbers of academic journals, all of varying quality. Usually, those regarded as the most prestigious and trusted are called “top-tier” journals. Top-tier journals have the highest impact scores. A journal’s impact score is based on the average number of citations per published paper in a particular year or period (Garfield, 2007). It is a ratio between the number of papers published and the number of times other authors cite each paper. Impact scores for over 2550 journals are reported annually in the *Journal Citation Reports* (JCR), which is prepared and published by Thomson Reuters, a multinational mass media and information firm. Librarians use impact scores to help them determine which journals to purchase and authors use them to decide where to send papers for publication (Garfield, 2007).

Top-tier journals publish papers by well-known scholars. In some programs, having a paper accepted for publication is a requirement for

receiving tenure, promotion, or research grants. These journals give tenure committees and granting agencies a standard from which to judge faculty research. Subsequently, top-tier journals receive many submissions and are very competitive. They also have high rejection rates. There is controversy around impact as some authors have discovered how to inflate their scores by citing their own research. Additionally, there have been reported instances of “coercing citation.” This entails requests by editors, or reviewers, to add citations to a submitted manuscript or risk rejection by that journal. Wilhite and Fong (2012) analyzed 6672 responses from a survey sent to researchers in economics, sociology, psychology, and business (marketing, finance, management, and accounting) and found a majority of respondents said they have “add[ed] superfluous citations before submitting to a journal known to coerce” (p. 542). The practice of using impact numbers is an imperfect measure of quality and as Eugene Garfield (2007), inventor of the system, writes, “Obviously, a better evaluation would involve actually reading each article for quality...” (p. 69). In sum, students should begin their literature searches with peer-reviewed articles from high impact journals, but they should read critically and determine the quality of each article for themselves.

The number of research journals has risen exponentially due in part to the increasing demands for graduate students to publish to obtain academic positions and post-doctoral funding (Billig, 2013). Many of these journals have low-impact scores and are considered to be second or third tier. They may publish edited papers as opposed to peer-reviewed. In these cases, the journal’s editor decides which papers will be published and what, if any, changes are required. However the papers published in these journals should not be dismissed, and students should judge each on its own merit. For example, student researchers do not have the time or money to run large clinical trials, but may nonetheless, have some important preliminary findings.

### *But Is It Research?*

Just as all research is not peer-reviewed, not everything published is based on research. Some journals publish opinion papers, which may or may not be peer-reviewed. Additionally, they may publish keynote speeches without editing. These individuals may be award recipients and hold status in the field, and are selected by their association’s executive board members to provide a keynote address for a conference. The resulting paper may be invited and may be based on opinion gained from long time participation

in the field. Metcalfe (2003) notes, “if the authors are giving their opinion about some social situation based, not on specific empirical research, but rather ‘long experience’ then the value of this ‘long experience’ needs to be justified” (para. 31). Metcalfe gives validity to long-time experience but asks, “Do the authors compare their opinion with others, do they openly address counter opinions, and are they free from bias, prejudice, inconsistency and publication opportunism?” (para. 32).

Commissioned reports, governmental policies, working papers, and conference proceedings are referred to as “grey literature” (Jesson, Matheson, & Lacey, 2011; Ridley, 2012). Conference proceedings are peer-reviewed for inclusion in the conference, but this may be based on as little as a 230–300 word abstract. Petticrew et al. (2008) conducted a systematic review of databases and found that less than half of the research presented at conferences was subsequently published. Ten researchers whose papers were not published were then interviewed to find what happened to the papers. Those interviewed gave a variety of reasons such as lost interest, and didn’t have the time to write the paper. One reported he or she “‘lost heart’ after poor reviews” (p. 553). If students elect to include a conference paper in the literature review, caution should be taken to ascertain if the paper was published at a later date.

Government policies and reports may not indicate the sources the authors used to produce the written document and may have political biases. Generally, books are not peer-reviewed. Anthologies, which are compilation of chapters written by several authors on a given topic, are usually written at the invitation of the book’s editor. The editor may be a well-known expert or a newcomer to the field. The quality of each chapter may vary and there are no impact factors to guide the student. In these cases, students must read carefully to consider the quality and credibility of each chapter.

Internet blogs should be omitted from the literature review. This is not to say the information provided by these venues is inaccurate. The Internet is a democratic place that allows people to voice their opinions without being silenced by the gatekeepers of the peer-review process. Anyone can put anything online. However, many top-tier peer-reviewed journals also are published as online sources, so publishing online does not automatically discount the quality and credibility of research found there.

The literature review should consist mainly of primary sources, which are original studies, informed by direct observation or other research methods that contain original data. Secondary sources are interpretations

of primary sources. In this sense, literature reviews are secondary sources. Tertiary literature is the further distilling of material to form textbooks and guidebooks. These resources may be informative, but students should take care in evaluating them before including them in a literature review.

Students must be critical of what they read and include in their literature review. However, being critical does not mean being overly negative or disrespectful. Kamler and Thomson (2006) advise, “But to be critical is also respectful of what others have done, to look at what they contributed, rather than going on the attack” (p. 40). They suggest asking what the research contributes, rather than point out how it fails. In my view, a good critique identifies both the strengths and weaknesses of published research. Students need to demonstrate they can judge the quality of a publication rather than report the findings as fact. It is important to examine claims made by the author and evaluate the evidence used to support those claims. What methodology was used? What are the data and how were they collected? Do the data support the claims? Does the author make generalizations based on a small descriptive study? What are the study’s limitations? Is bias evident? It is important to distinguish between an assertion and that which provides evidence to support the claim. Baumeister and Leary (1997) recommend, “Group or section critiques are often useful because many studies on the same topic may be subject to similar flaws or criticisms” (p. 318).

### *Where to Start and When to Stop*

A literature review should start with an appointment with a research librarian. This is key because he or she can provide expertise on how to source and judge the quality of the literature. Librarians will identify specialized databases and provide instruction on how to use referencing systems, such as EndNote or RefWorks, to help manage the resources. These systems automatically format the papers, though caution should be taken to ensure the citations accurately conform to the guidelines of a particular style, such as APA, Chicago, or AMA.

Fink (2010) provides four key words, which help focus a search: systematic, explicit, comprehensive, and reproducible (p. 15). Students must systematically search relevant databases and explicitly communicate their decisions to the reader. It is important to keep detailed records of searches, both to establish an audit trail and to avoid duplicating searches. Make a note of each database searched, when it was searched, what years of publication were covered, and which publications were included. Keep track of key words

used in each search. This careful note taking will save time and having to repeat the search years later when students have forgotten they already did it.

Students should make notes as they read, and keep them organized. Special care should be taken to distinguish between a direct quote and a paraphrased idea. Plagiarism can happen when students inadvertently copy a direct quote into their paper, thinking it to be something they wrote. Ensure that all direct quotes have quotation marks followed by the page from which the quote was taken. Create a list of every article and book read, with notes and citations for each, no matter how pointless it might seem. This is especially important at the beginning of the search. There's nothing more annoying than getting half way through an article and realizing you'd already read it three years ago, or remembering a paper but not being able to find it.

I take Fink's notion of explicit to mean that the student should determine the parameters of their literature search. Students are not expected to review all the literature ever written on a subject. It should be clear that exhaustion describes the review, not the student. Reviewing papers from a specific period of time, or using a specific methodology may provide useful limits. A narrowly focused review can provide more depth than one that is far-reaching. Students must explicitly identify and defend their criteria for inclusion and exclusion of the resources they find (Randolf, 2009). Fink (2010) identifies a comprehensive review as one that supplements electronic searches with reviews of references in the identified literature and manual searches of references and journals. The reference list at the end of a paper can often point to something that might not be found otherwise. Last, a review is reproducible when the reader follows the student's path to search literature and arrives with similar results.

Theoretically, the review stops when the reviewer reaches saturation, which means he or she finds no additional papers that provide new information. For the student, this may seem like the literature review can go on forever, and they would be correct. New information is added daily. So when can the search stop? Randolph (2009) points out that a literature review is a labor intensive process, and estimates that doctoral students will need between three to six months to complete the task. Booth, Papaioannou, and Sutton (2012) recommend students spend between nine months to a year to do so. I recommend master's students devote a semester to writing the literature review. This is based on the practical notion that, in a two-year program, a quarter of the student's time should be devoted to locating existing literature for their proposal. Clearly, a meta-analysis or meta-synthesis, which is also



the methodology for the research, should take a greater amount of time to complete. However, reviewing the literature is an on-going process that stops when the final thesis is submitted. Literature is constantly updated and added to the thesis when it is relevant.

### *Writing the Review*

When writing the review, students should begin by telling the readers, in this case the supervisor and thesis committee, what the literature review is about. What questions did the existing literature answer? Next, provide the details of the way the literature was searched. Describe the parameters for the search. What was included and what was intentionally omitted? For example, were commissioned reports included? Why or why not? This audit trail includes the databases and key words used for the search. The audit trail gives the readers confidence that the search was systematic and comprehensive. If little was found on the topic, the supervisor may be able to suggest alternative key terms or additional databases that will yield more results.

Randolf (2009) lists three common ways to organize the review: the historical format, the conceptual format, and methodological format. The historical review is used to demonstrate changes in understanding, and resources are presented chronologically. This is used when students wish to show progress or demonstrate how ideas change or theories develop over time. The conceptual approach, or a theoretically focused review, is structured around various theories posited in the literature. A methodological review presents the paper like empirical research, in that it provides an introduction, the method, and results and discussion. When assessing the literature, critique groups of studies rather than each one individually. When using any of these organizational structures, address how other researchers' work informs the proposed research. How will your research build on, or fill the gap? What problems suggested by the literature will your research address?

### *Common Mistakes Made in Literature Reviews*

Holbrook et al. (2007) examined 1310 written reports from external theses examiners for 501 doctoral candidates across five Australian universities. They found three problems most commonly identified with the literature review of completed theses: inadequate or missing key literature, inaccuracy, and poor use.

#### CHAPTER 4

An inadequate literature review is one that is missing key literature, relies too heavily on secondary sources, or includes poor examples. It is not uncommon to attend a conference and hear a novice researcher make the claim that little research has been conducted on his or her topic. Inevitably, someone is sitting in the back of the room, arms crossed, waiting for the presentation to end to point to the fact that she or he had written the definitive book on the subject. In some cases, the researcher did not conduct a thorough literature review or had narrowed the search to keywords that did not encompass the topic. However, even the most careful researcher may miss something, so these suggestions should be regarded as constructive criticism.

A literature review should use primary sources and should never contain secondary citations. For example, a student may cite John Dewey (1930) but take the citation from Smith, who quoted Dewey in her text. In order to cite Dewey, students must read Dewey, no matter how painful that may be. They may not recount Proust's lovely story about sweet scented *madeleines* unless they have read both volumes of *À la recherche du temps perdu*. Metcalfe (2003), using the metaphor of a courtroom trial, considers secondary citation as "hearsay evidence" (p. 9). He makes the general rule: "Do not reference an article unless you have read it yourself" (p. 10). It is essential that students are able to demonstrate an in-depth knowledge of all the literature they cite and committee members may question such knowledge during an oral defense.

Inaccurate references include omitting or inconsistently citing a reference. This includes misspelling an author's name, listing the wrong publication date, or misquoting the author. Take care that every citation used in the text also appears in the references and vice versa. Thesis examiners see sloppy citations as red flags alerting them to the possibility of plagiarism (Holbrook et al., 2007). Citing the exact page number and ensuring all information is correct is essential. Correcting citations after the thesis has been written is time consuming. It is more efficient to do it right the first time.

The following chapter discusses plagiarism and ways to avoid it when working with source materials, but there are other negative ways in which students may use the literature on which their thesis is based. Poor use can mean that key literature was intentionally omitted because it disagreed with the student's premise. This includes "cherry picking" quotes that agree with the premise, but are taken out of their original context.

Poor use also includes confusing an assertion with evidence. An author may make a strong statement, but students must ask how the author came to the conclusion? What data was provided to support the claim? Simply

repeating the author's claim does not make it true. Baumeister and Leary (1997) point out a common mistake is citing a study's conclusion without discussing the methodology or supporting evidence. There is a difference between reporting on what a paper or researcher said and providing an analysis of the research. Reporting takes for granted the writer did proper research, whereas analysis examines the research methods and findings.

### *Stringing and Dumping*

Authors, responding to the word limitations for published papers, have developed short-cut strategies to write as much as possible in the least amount of space. Two of those strategies are stringing and dumping. Described by Metcalfe (2003), dumping involves writing a statement, followed by numerous sources. It is used when a topic has been taken up by a number of researchers. The following example is taken from Hayes and Introna's (2005) paper on plagiarism.

The issue of academic integrity within higher education has received considerable attention in the literature over recent years. (Carroll & Appleton, 2001; Decert, 1993; Harris, 2001; Howard, 1993, 1995; Kolich, 1983; Lanthrop, 2000; Martin, 1994;...) (p. 213)

By dumping the names and dates of the sources, the authors demonstrate that they have done due diligence by finding articles written on their topic, and support their assertion that "The issue of academic integrity within higher education has received considerable attention over recent years" (p. 213). However, they do not discuss what kind of attention was given or explain what each found. Collectively, what did these authors contribute to our understanding of the topic? Perhaps they assume readers are familiar with the literature or, if interested, will follow-up on the sources cited.

An example of stringing comes from Park (2003):

The plagiarist has been describes as a "thought thief" (Whiteneck, 2002) or "intellectual shoplifter" (Stebelman, 1998), charged with having committed "forgery" (Groom, 2000), "theft of ideas" (Hopkins, 1993) and a "crime." (Franke, 1993, p. 473)

Stringing and dumping are forms of name-dropping. Neither develops the ideas covered in the material cited nor indicates if the citations are from evidence or opinion. The practice has become the culture for a number of academic journals, but the practice does nothing to advance scholarship or knowledge.

#### CHAPTER 4

Students may dump and string because they are imitating the common culture of journal writing. They may be afraid they will be called out for missing a key piece of literature so they are over zealous to include anything ever written about the subject. But, simply citing something does not demonstrate an understanding of what was written nor provide a critique of it. It only demonstrates the ability to find articles. Students are responsible for everything they include in their thesis and must defend why they include each citation. Is the research significant to the student's research and is it reliable research? If poor research is cited, then students should indicate the problems or limitations of the research. If the thesis is built on a weak foundation, it will not stand.

This chapter closes by reminding students that the process of searching for literature does not end with the proposal. Students need to update their literature to include any new and relevant research published during the research period. This is particularly important for those in fields, such as humanities and education, where the thesis process can take many years. The literature review should not look like a time capsule of the year the proposal was written. Students may need to conduct additional searches if their data suggest findings that differ from the original focus. Sources need to be constantly added to, and in some cases, deleted as the research narrows. After the initial literature review is written, students should devote a specific amount of time to refreshing their search. Doing so will also help to keep a keen interest in the sometimes long task of writing a thesis.