Literature Reviews for Education and Nursing Graduate Students

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LITERATURE REVIEWS FOR EDUCATION AND NURSING GRADUATE STUDENTS

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PREFACE

Congratulations! You applied and were accepted into a graduate-level program at [fill in the blank] university. In your first research methods class, your assignment is to do a comprehensive literature review on a topic of your choice. It sounds easy enough – just find a few articles related to your topic and summarize, right? You probably did this type of annotated bibliography as an undergraduate and are pretty optimistic about doing another one. As the professor and other classmates talk more about the demands and expectations for this literature review, however, you may begin to feel less confident. If it's any consolation, you are not alone.

> Writing a literature review involves a synthesis of a complex range of analytical and rhetorical skills as well as academic writing skills, and an understanding of what is meant by critical analysis and argument.(Turner & Bitchener, 2008).

At the same time, there is often a disconnect between what faculty expect in terms of research and writing skills and what incoming graduate students understand about how to conduct a literature review. At the graduate level, and especially when preparing a thesis or dissertation, the literature review is a high-stakes document that introduces the novice researcher to the scholarly conversation of his/her discipline for the first time. Students are often surprised that the specific research and writing skills needed to do a graduate-level literature review aren't taught in class, while faculty may assume students already have these skills (Harris, 2011). As a result, "most graduate students receive little or no formal training in how to analyze and synthesize the research literature in their field" (Boote & Beile, 2005, p. 5). It is for these students that we write this book.

Literature Reviews for Education and Nursing Graduate Students introduces you to the components of the stand-alone literature review and prepares you to write one of your own. This open textbook is designed to help students in graduate-level nursing and education programs recognize the significant role the literature review plays in the research process and synthesize and cite key sources with confidence. Although specific examples are generally nursing or education related, most of the content is also applicable to other students in the social sciences. Likewise, this textbook is openly licensed, meaning it is available at no cost

to anyone in the world who would like to use it. Instructors (and others) may freely edit or modify it and assign as much or as little as needed.

Literature Reviews for Education and Nursing Graduate Students is written for new graduate students and novice researchers just entering the work of their chosen discipline. It is meant to assist "students who can complete course assignments to scholars who can make a contribution to their respective fields." (Switzer & Perdue, 2011, p. 12). The book was written by two librarians with expertise guiding nursing and education graduate students through the literature review research and writing process. We include in the book examples from the literature of nursing and education to facilitate a greater understanding of what it means to be a successful graduate student. Our intent is to promote the idea that the literature review is a dynamic and complex synthesis of research and writing that is quite different than an annotated bibliography.

Literature Reviews for Education and Nursing Graduate Students covers topics related to literature review research and writing. Chapter 1 provides an overview of literature reviews and their purpose. Chapters 2 and 3 relate to getting started with the review, including how to develop a research question or hypothesis. Chapters 4 and 5 deal with the research process, that is, where to find relevant sources and how to evaluate their credibility. Chapters 6 and 7 discuss how to document sources and, one of the most difficult tasks novice researchers face, how to synthesize information. Chapter 8 is focused on writing your own literature review. A short conclusion and an answer key to questions asked in previous chapters complete the text. Each chapter begins with a summary of learning objectives for that chapter and concludes with a set of questions to assess your understanding of the topics covered. Examples, tutorials, videos, additional resources, websites and/or activities are provided. Finally, at the end of each chapter you will find a list of works cited as well as image attributions.

Although this textbook does not contain all of the answers you will need to successfully write a literature review, the authors hope that when used in combination with all of the other experiences you will have as a graduate student, it will help you to become the researcher and scholar you want to be.

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CHAPTER 1: INTRODUCTION

Learning Objectives

At the conclusion of this chapter, you will be able to:

- Identify the purpose of the literature review in the research process
- Distinguish between different types of literature reviews

1.1 WHAT IS A LITERATURE REVIEW?

Pick up nearly any book on research methods and you will find a description of a literature review. At a basic level, the term implies a survey of factual or nonfiction books, articles, and other documents published on a particular subject. Definitions may be similar across the disciplines, with new types and definitions continuing to emerge. Generally speaking, a literature review is a:

- "comprehensive background of the literature within the interested topic area…" (O'Gorman & MacIntosh, 2015, p. 31).
- "critical component of the research process that provides an in-depth analysis of recently published research findings in specifically identified areas of interest." (House, 2018, p. 109).
- "written document that presents a logically argued case founded on a comprehensive understanding of the current state of knowledge about a topic of study" (Machi & McEvoy, 2012, p. 4).

As a foundation for knowledge advancement in every discipline, it is an important element of any research project. At the graduate or doctoral level, the literature review is an essential feature of thesis and dissertation, as well as grant proposal writing. That is to say, "A substantive, thorough, sophisticated literature review is a precondition for doing substantive,

thorough, sophisticated research…A researcher cannot perform significant research without first understanding the literature in the field." (Boote & Beile, 2005, p. 3). It is by this means, that a researcher demonstrates familiarity with a body of knowledge and thereby establishes credibility with a reader. An advanced-level literature review shows how prior research is linked to a new project, summarizing and synthesizing what is known while identifying gaps in the knowledge base, facilitating theory development, closing areas where enough research already exists, and uncovering areas where more research is needed. (Webster & Watson, 2002, p. xiii)

A graduate-level literature review is a compilation of the most significant previously published research on your topic. Unlike an annotated bibliography or a research paper you may have written as an undergraduate, your literature review will outline, evaluate and synthesize relevant research and relate those sources to your own thesis or research question. It is much more than a summary of all the related literature.

It is a type of writing that demonstrate the importance of your research by defining the main ideas and the relationship between them. A good literature review lays the foundation for the importance of your stated problem and research question.

Literature reviews:

- define a concept
- map the research terrain or scope
- systemize relationships between concepts
- identify gaps in the literature (Rocco & Plathotnik, 2009, p. 128)

The purpose of a literature review is to demonstrate that your research question is meaningful. Additionally, you may review the literature of different disciplines to find deeper meaning and understanding of your topic. It is especially important to consider other disciplines when you do not find much on your topic in one discipline. You will need to search the cognate literature before claiming there is "little previous research" on your topic.

Well developed literature reviews involve numerous steps and activities. The literature review is an iterative process because you will do at least two of them: a preliminary search to learn what has been published in your area and whether there is sufficient support in the literature for moving ahead with your subject. After this first exploration, you will conduct a deeper dive into the literature to learn everything you can about the topic and its related issues.

Literature Review Tutorial

This video is licensed under a CC BY-NC-SA 3.0 by NCSU Libraries. Transcript.

1.2 LITERATURE REVIEW BASICS

An effective literature review must:

- Methodologically analyze and synthesize quality literature on a topic
- Provide a firm foundation to a topic or research area
- Provide a firm foundation for the selection of a research methodology
- Demonstrate that the proposed research contributes something new to the overall body of knowledge of advances the research field's knowledge base. (Levy & Ellis, 2006).

All literature reviews, whether they are qualitative, quantitative or both, will at some point:

1. Introduce the topic and define its key terms
2. Establish the importance of the topic
3. Provide an overview of the amount of available literature and its types (for example: theoretical, statistical, speculative)
4. Identify gaps in the literature
5. Point out consistent finding across studies
6. Arrive at a synthesis that organizes what is known about a topic
7. Discusses possible implications and directions for future research

1.3 TYPES OF LITERATURE REVIEWS

There are many different types of literature reviews, however there are some shared characteristics or features. Remember a comprehensive literature review is, at its most fundamental level, an original work based on an extensive critical examination and synthesis of the relevant literature on a topic. As a study of the research on a particular topic, it is arranged by key themes or findings, which may lead up to or link to the research question. In some cases, the research question will drive the type of literature review that is undertaken.

The following section includes brief descriptions of the terms used to describe different literature review types with examples of each. The included citations are open access, Creative Commons licensed or copyright-restricted.

1.3.1 TYPES OF REVIEW

1.3.1.1 Conceptual

Guided by an understanding of basic issues rather than a research methodology. You are looking for key factors, concepts or variables and the presumed relationship between them. The goal of the conceptual literature review is to categorize and describe concepts relevant to your study or topic and outline a relationship between them. You will include relevant theory and empirical research.

Examples of a Conceptual Review:

- **Education**: The formality of learning science in everyday life: A conceptual literature review. (Dohn, 2010).
- **Education**: Are we asking the right questions? A conceptual review of the educational development literature in higher education. (Amundsen & Wilson, 2012).

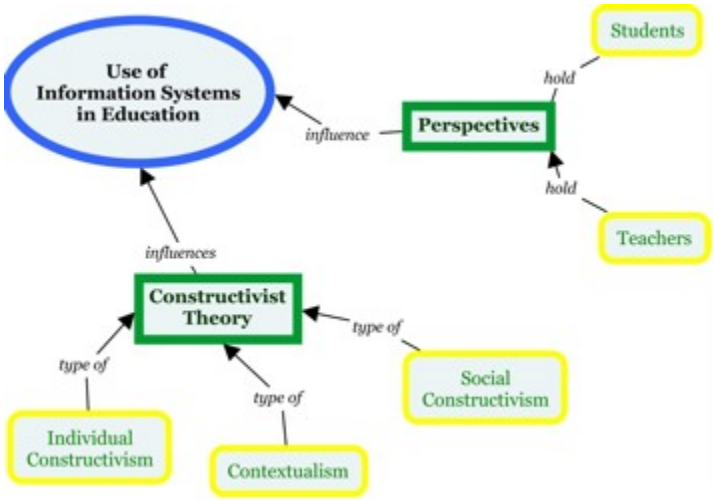


Figure 1.1: Concept map

1.3.1.2 Empirical

An empirical literature review collects, creates, arranges, and analyzes numeric data reflecting the frequency of themes, topics, authors and/or methods found in existing literature. Empirical literature reviews present their summaries in quantifiable terms using descriptive and inferential statistics.

Examples of an Empirical Review:

- **Nursing**: False-positive findings in Cochrane meta-analyses with and without application of trial sequential analysis: An empirical review. (Imberger, Thorlund, Gluud, & Wettersley, 2016).
- **Education**: Impediments of e-learning adoption in higher learning institutions of Tanzania: An empirical review (Mwakyusa & Mwalyagile, 2016).

1.3.1.3 Exploratory

Unlike a synoptic literature review, the purpose here is to provide a broad approach to the topic area. The aim is breadth rather than depth and to get a general feel for the size of the topic area. A graduate student might do an exploratory review of the literature before beginning a synoptic, or more comprehensive one.

Examples of an Exploratory Review:

- **Education**: University research management: An exploratory literature review. (Schuetzenmeister, 2010).
- **Education**: An exploratory review of design principles in constructivist gaming learning environments. (Rosario & Widmeyer, 2009).

Figure 1.2

1.3.1.4 Focused

A type of literature review limited to a single aspect of previous research, such as methodology. A focused literature review generally will describe the implications of choosing a particular element of past research, such as methodology in terms of data collection, analysis and interpretation.

Examples of a Focused Review:

- **Nursing**: Clinical inertia in the management of type 2 diabetes mellitus: A focused literature review. (Khunti, Davies, & Khunti, 2015).
- **Education**: Language awareness: Genre awareness-a focused review of the literature. (Stainton, 1992).

1.3.1.5 Integrative

Critiques past research and draws overall conclusions from the body of literature at a specified point in time. Reviews, critiques, and synthesizes representative literature on a topic in an integrated way. Most integrative reviews are intended to address mature topics or emerging topics. May require the author to adopt a guiding theory, a set of competing models, or a point of view about a topic. For more description of integrative reviews, see Whittemore & Knafl (2005).

Examples of an Integrative Review:

- **Nursing**: Interprofessional teamwork and collaboration between community health workers and healthcare teams: An integrative review. (Franklin, Bernhardt, Lopez, Long-Middleton, & Davis, 2015).
- **Education**: Exploring the gap between teacher certification and permanent employment in Ontario: An integrative literature review. (Brock & Ryan, 2016).

1.3.1.6 Meta-analysis

A subset of a systematic review, that takes findings from several studies on the same subject and analyzes them using standardized statistical procedures to pool together data. Integrates findings from a large body of quantitative findings to enhance understanding, draw conclusions, and detect patterns and relationships. Gather data from many different, independent studies that look at the same research question and assess similar outcome measures. Data is combined and re-analyzed, providing a greater statistical power than any single study alone. It's important to note that not every systematic review includes a meta-analysis but a meta-analysis can't exist without a systematic review of the literature.

Examples of a Meta-Analysis:

- **Education**: Efficacy of the cooperative learning method on mathematics achievement and attitude: A meta-analysis research. (Capar & Tarim, 2015).
- **Nursing**: A meta-analysis of the effects of non-traditional teaching methods on the critical thinking abilities of nursing students. (Lee, Lee, Gong, Bae, & Choi, 2016).
- **Education**: Gender differences in student attitudes toward science: A meta-analysis of the literature from 1970 to 1991. (Weinburgh, 1995).

1.3.1.7 Narrative/Traditional

An overview of research on a particular topic that critiques and summarizes a body of literature. Typically broad in focus. Relevant past research is selected and synthesized into a coherent discussion. Methodologies, findings and limits of the existing body of knowledge are discussed in narrative form. Sometimes also referred to as a traditional literature review. Requires a sufficiently focused research question. The process may be subject to bias that supports the researcher's own work.

Examples of a Narrative/Traditional Review:

- **Nursing**: Family carers providing support to a person dying in the home setting: A narrative literature review. (Morris, King, Turner, & Payne, 2015).

- **Education**: Adventure education and Outward Bound: Out-of-class experiences that make a lasting difference. (Hattie, Marsh, Neill, & Richards, 1997).
- **Education**: Good quality discussion is necessary but not sufficient in asynchronous tuition: A brief narrative review of the literature. (Fear & Erikson-Brown, 2014).
- **Nursing**: Outcomes of physician job satisfaction: A narrative review, implications, and directions for future research. (Williams & Skinner, 2003).

1.3.1.8 Realist

Aspecific type of literature review that is theory-driven and interpretative and is intended to explain the outcomes of a complex intervention program(s).

Examples of a Realist Review:

- **Nursing**: Lean thinking in healthcare: A realist review of the literature. (Mazzacato, Savage, Brommels, 2010).
- **Education**: Unravelling quality culture in higher education: A realist review. (Bendermacher, Egbrink, Wolfhagen, & Dolmans, 2017).

1.3.1.9 Scoping

Tend to be non-systematic and focus on breadth of coverage conducted on a topic rather than depth. Utilize a wide range of materials; may not evaluate the quality of the studies as much as count the number. One means of understanding existing literature. Aims to identify nature and extent of research; preliminary assessment of size and scope of available research on topic. May include research in progress.

Examples of a Scoping Review:

- **Nursing**: Organizational interventions improving access to community-based primary health care for vulnerable populations: A scoping review. (Khanassov, Pluye, Descoteaux, Haggerty, Russell, Gunn, & Levesque, 2016).
- **Education**: Interdisciplinary doctoral research supervision: A scoping review. (Vanstone, Hibbert, Kinsella, McKenzie, Pitman, & Lingard, 2013).
- **Nursing**: A scoping review of the literature on the abolition of user fees in health care services in Africa. (Ridde, & Morestin, 2011).

1.3.1.10 Synoptic

Unlike an exploratory review, the purpose is to provide a concise but accurate overview of all material that appears to be relevant to a chosen topic. Both content and methodological

material is included. The review should aim to be both descriptive and evaluative. Summarizes previous studies while also showing how the body of literature could be extended and improved in terms of content and method by identifying gaps.

Examples of a Synoptic Review:

- **Education**: Theoretical framework for educational assessment: A synoptic review. (Ghaicha, 2016).
- **Education**: School effects research: A synoptic review of past efforts and some suggestions for the future. (Cuttance, 1981).

1.3.1.11 Systematic Review

A rigorous review that follows a strict methodology designed with a presupposed selection of literature reviewed. Undertaken to clarify the state of existing research, the evidence, and possible implications that can be drawn from that. Using comprehensive and exhaustive searching of the published and unpublished literature, searching various databases, reports, and grey literature. Transparent and reproducible in reporting details of time frame, search and methods to minimize bias. Must include a team of at least 2-3 and includes the critical appraisal of the literature. For more description of systematic reviews, including links to protocols, checklists, workflow processes, and structure see "A Young Researcher's Guide to a Systematic Review".

Examples of a Systematic Review:

- **Education**: The potentials of using cloud computing in schools: A systematic literature review (Hartmann, Braae, Pedersen, & Khalid, 2017)
- **Nursing**: Is butter back? A systematic review and meta-analysis of butter consumption and risk of cardiovascular disease, diabetes, and total mortality. (Pimpin, Wu, Haskelberg, Del Gobbo, & Mozaffarian, 2016).
- **Education**: The use of research to improve professional practice: a systematic review of the literature. (Hemsley-Brown & Sharp, 2003).
- **Nursing**: Using computers to self-manage type 2 diabetes. (Pal, Eastwood, Michie, Farmer, Barnard, Peacock, Wood, Inniss, & Murray, 2013).

1.3.1.12 Umbrella/Overview of Reviews

Compiles evidence from multiple systematic reviews into one document. Focuses on broad condition or problem for which there are competing interventions and highlights reviews that address those interventions and their effects. Often used in recommendations for practice.

Examples of an Umbrella/Overview Review:

- **Education**: Reflective practice in healthcare education: An umbrella review. (Fragknos, 2016).
- **Nursing**: Systematic reviews of psychosocial interventions for autism: an umbrella review. (Seida, Ospina, Karkhaneh, Hartling, Smith, & Clark, 2009).

For a brief discussion see "Not all literature reviews are the same" (Thomson, 2013).

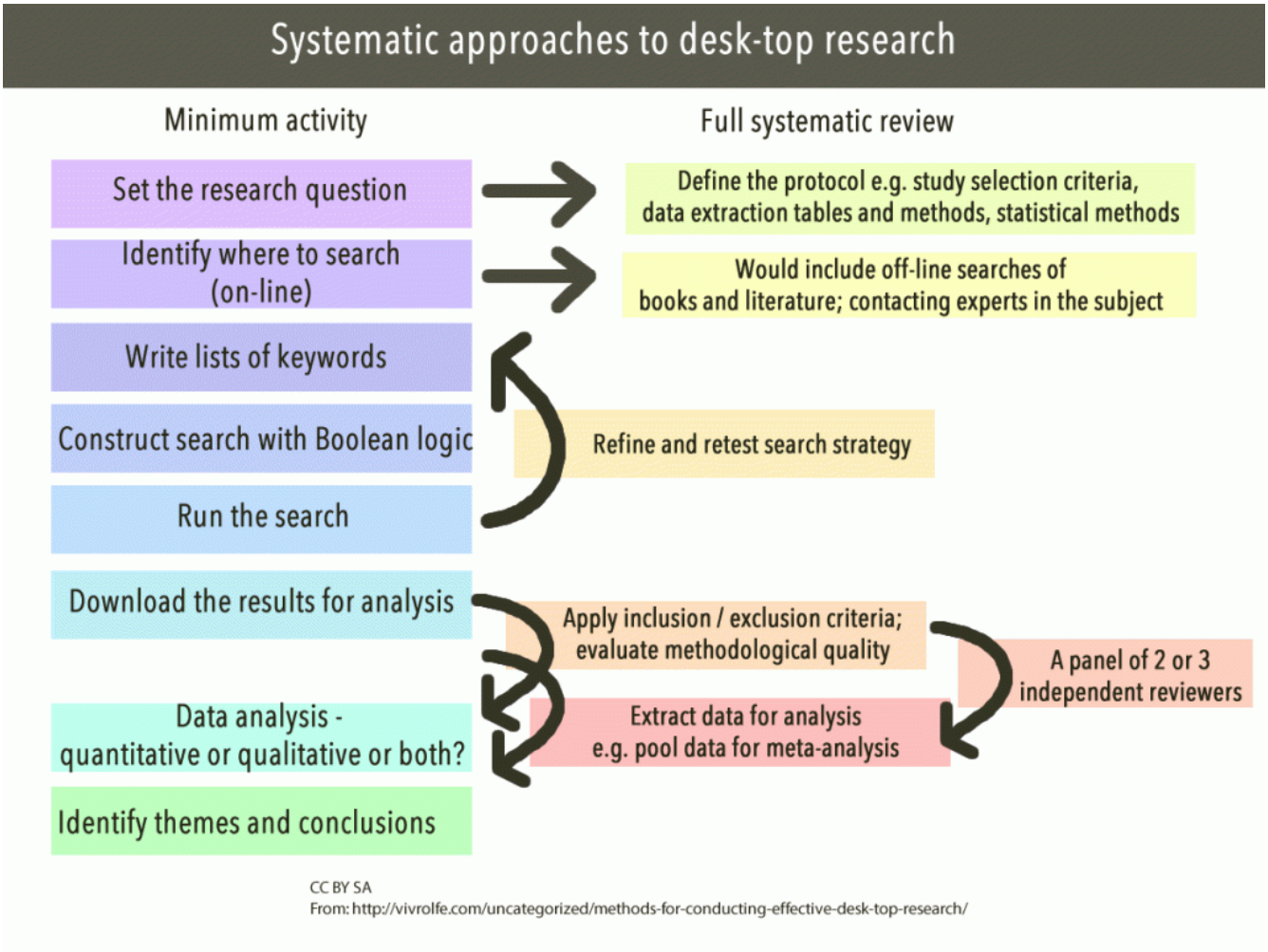


Figure 1.3: Systemic Approaches to Desk-top Research

1.4 WHY DO A LITERATURE REVIEW?

The purpose of the literature review is the same regardless of the topic or research method. It tests your own research question against what is already known about the subject.

1.4.1 First – It's part of the whole. Omission of a literature review chapter or section in a graduate-level project represents a serious void or absence of critical element in the research process.

The outcome of your review is expected to demonstrate that you:

- can systematically explore the research in your topic area
- can read and critically analyze the literature in your discipline and then use it appropriately to advance your own work
- have sufficient knowledge in the topic to undertake further investigation

1.4.2 Second – It's good for you!

- You improve your skills as a researcher
- You become familiar with the discourse of your discipline and learn how to be a scholar in your field
- You learn through writing your ideas and finding your voice in your subject area
- You define, redefine and clarify your research question for yourself in the process

1.4.3 Third – It's good for your reader. Your reader expects you to have done the hard work of gathering, evaluating and synthesizes the literature. When you do a literature review you:

- Set the context for the topic and present its significance
- Identify what's important to know about your topic – including individual material, prior research, publications, organizations and authors.
- Demonstrate relationships among prior research
- Establish limitations of existing knowledge
- Analyze trends in the topic's treatment and gaps in the literature

1.4.4 WHY DO A LITERATURE REVIEW?

- To locate gaps in the literature of your discipline
- To avoid reinventing the wheel
- To carry on where others have already been
- To identify other people working in the same field
- To increase your breadth of knowledge in your subject area
- To find the seminal works in your field
- To provide intellectual context for your own work

- To acknowledge opposing viewpoints
- To put your work in perspective
- To demonstrate you can discover and retrieve previous work in the area

1.5 COMMON LITERATURE REVIEW ERRORS

Graduate-level literature reviews are more than a summary of the publications you find on a topic. As you have seen in this brief introduction, literature reviews are a very specific type of research, analysis, and writing. We will explore these topics more in the next chapters. Some things to keep in mind as you begin your own research and writing are ways to avoid the most common errors seen in the first attempt at a literature review. For a quick review of some of the pitfalls and challenges a new researcher faces when he/she begins work, see "Get Ready: Academic Writing, General Pitfalls and (oh yes) Getting Started!".

As you begin your own graduate-level literature review, try to avoid these common mistakes:

- Accepts another researcher's finding as valid without evaluating methodology and data
- Contrary findings and alternative interpretations are not considered or mentioned
- Findings are not clearly related to one's own study, or findings are too general
- Insufficient time allowed to define best search strategies and writing
- Isolated statistical results are simply reported rather than synthesizing the results
- Problems with selecting and using most relevant keywords, subject headings and descriptors
- Relies too heavily on secondary sources
- Search methods are not recorded or reported for transparency
- Summarizes rather than synthesizes articles

In conclusion, the purpose of a literature review is three-fold:

1. to survey the current state of knowledge or evidence in the area of inquiry,
2. to identify key authors, articles, theories, and findings in that area, and
3. to identify gaps in knowledge in that research area.

A literature review is commonly done today using computerized keyword searches in online databases, often working with a trained librarian or information expert. Keywords can be combined using the Boolean operators, "and", "or" and sometimes "not" to narrow down or expand the search results. Once a list of articles is generated from the keyword and subject

heading search, the researcher must then manually browse through each title and abstract, to determine the suitability of that article before a full-text article is obtained for the research question.

Literature reviews should be reasonably complete, and not restricted to a few journals, a few years, or a specific methodology or research design. Reviewed articles may be summarized in the form of tables, and can be further structured using organizing frameworks such as a concept matrix.

A well-conducted literature review should indicate whether the initial research questions have already been addressed in the literature, whether there are newer or more interesting research questions available, and whether the original research questions should be modified or changed in light of findings of the literature review.

The review can also provide some intuitions or potential answers to the questions of interest and/or help identify theories that have previously been used to address similar questions and may provide evidence to inform policy or decision-making. (Bhattacherjee, 2012).

Figure 1.4

Practice

Read Abstract 1. Refer to Types of Literature Reviews. What type of literature review do you think this study is and why? See the Answer Key for the correct response.

Nursing: To describe evidence of international literature on the safe care of the hospitalised child after the World Alliance for Patient Safety and list contributions of the general theoretical framework of patient safety for paediatric nursing.

An integrative literature review between 2004 and 2015 using the databases PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Scopus, Web of Science and Wiley Online Library, and the descriptors Safety or Patient safety, Hospitalised child, Paediatric nursing, and Nursing care.

Thirty-two articles were analysed, most of which were from North American, with a descriptive approach. The quality of the recorded information in the medical records, the use of checklists, and the training of health workers contribute to safe care in paediatric nursing and improve the medication process and partnerships with parents.

General information available on patient safety should be incorporated in paediatric nursing care. (Wegner, Silva, Peres, Bandeira, Frantz, Botene, & Predebon, 2017).

Read Abstract 2. Refer to Types of Literature Reviews. What type of lit review do you think this study is and why? See the Answer Key for the correct response.

Education: The focus of this paper centers around timing associated with early childhood education programs and interventions using meta-analytic methods. At any given assessment age, a child's current age equals starting age, plus duration of program, plus years since program ended. Variability in assessment ages across the studies should enable everyone to identify the separate effects of all three time-related components. The project is a meta-analysis of evaluation studies of early childhood education programs conducted in the United States and its territories between 1960 and 2007. The population of interest is children enrolled in early childhood education programs between the ages of 0 and 5 and their control-group counterparts. Since the data come from a meta-analysis, the population for this study is drawn from many different studies with diverse samples. Given the preliminary nature of their analysis, the authors cannot offer conclusions at this point. (Duncan, Leak, Li, Magnuson, Schindler, & Yoshikawa, 2011).

Test Yourself

See Answer Key for the correct responses.

Question 1

The purpose of a graduate-level literature review is to summarize in as many words as possible everything that is known about my topic.

- True
- False

Question 2

A literature review is significant because in the process of doing one, the researcher learns to read and critically assess the literature of a discipline and then uses it appropriately to advance his/her own research.

- True
- False

Question 3

Read the following abstract and choose the correct type of literature review it represents.

Nursing: E-cigarette use has become increasingly popular, especially among the young. Its long-term influence upon health is unknown. Aim of this review has been to present the current state of knowledge about the impact of e-cigarette use on health, with an emphasis on Central and Eastern Europe. During the preparation of this narrative review, the literature on e-cigarettes available within the network PubMed was retrieved and examined. In the final review, 64 research papers were included. We specifically assessed the construction and operation of the e-cigarette as well as the chemical composition of the e-liquid; the impact that vapor arising from the use of e-cigarette explored in experimental models in vitro; and short-term effects of use of e-cigarettes on users' health. Among the substances inhaled by the e-smoker, there are several harmful products, such as: formaldehyde, acetaldehyde, acroleine, propanal, nicotine, acetone, o-methyl-benzaldehyde, carcinogenic nitrosamines. Results from experimental animal studies indicate the negative impact of e-cigarette exposure on test models, such as ascytotoxicity, oxidative stress, inflammation, airway hyper reactivity, airway remodeling, mucin production, apoptosis, and emphysematous changes. The short-term impact of e-cigarettes

on human health has been studied mostly in experimental setting. Available evidence shows that the use of e-cigarettes may result in acute lung function responses (e.g., increase in impedance, peripheral airway flow resistance) and induce oxidative stress. Based on the current available evidence, e-cigarette use is associated with harmful biologic responses, although it may be less harmful than traditional cigarettes. (Jankowski, Brożek, Lawson, Skoczyński, & Zejda, 2017).

- Meta-analysis
- Exploratory
- Narrative
- Empirical

Question 4

Read the following abstract and choose the correct type of literature review it represents.

Education: In this review, Mary Vorsino writes that she is interested in keeping the potential influences of women pragmatists of Dewey's day in mind while presenting modern feminist re readings of Dewey. She wishes to construct a narrowly-focused and succinct literature review of thinkers who have donned a feminist lens to analyze Dewey's approaches to education, learning, and democracy and to employ Dewey's works in theorizing on gender and education and on gender in society. This article first explores Dewey as both an ally and a problematic figure in feminist literature and then investigates the broader sphere of feminist pragmatism and two central themes within it: (1) valuing diversity, and diverse experiences; and (2) problematizing fixed truths. (Vorsino, 2015).

- Scoping
- Exploratory
- Synoptic
- Focused

REFERENCES

IMAGE ATTRIBUTIONS

CHAPTER 2: WHAT IS A LITERATURE REVIEW?

Learning Objectives

At the conclusion of this chapter, you will be able to:

- Recognize how information is created and how it evolves over time.
- Identify how the information cycle impacts the reliability of the information.
- Select information sources appropriate to information need.

2.1 OVERVIEW OF INFORMATION

Because a literature review is a summary and analysis of the relevant publications on a topic, we first have to understand what is meant by 'the literature'. In this case, 'the literature' is a collection of all of the relevant written sources on a topic. It will include both theoretical and empirical works. Both types provide scope and depth to a literature review.

Figure 2.1

2.1.1 DISCIPLINES OF KNOWLEDGE

When drawing boundaries around an idea, topic, or subject area, it helps to think about how and where the information for the field is produced. For this, you need to identify the disciplines of knowledge production in a subject area.

Information does not exist in the environment like some kind of raw material. It is produced by individuals working within a particular field of knowledge who use specific methods for generating new information. Disciplines are knowledge-producing and -disseminating systems which consume, produce and disseminate knowledge. Looking through a course catalog of a post-secondary educational institution gives clues to the structure of a discipline structure. Fields such as political science, biology, history and mathematics are unique disciplines, as are education and nursing, with their own logic for how and where new knowledge is introduced and made accessible.

You will need to become comfortable with identifying the disciplines that might contribute information to any search strategy. When you do this, you will also learn how to decode the way how people talk about a topic within a discipline. This will be useful to you when you begin a review of the literature in your area of study.

For example, think about the disciplines that might contribute information to a the topic such as the role of sports in society. Try to anticipate the type of perspective each discipline might have on the topic. Consider the following types of questions as you examine what different disciplines might contribute:

- What is important about the topic to the people in that discipline?
- What is most likely to be the focus of their study about the topic?
- What perspective would they be likely to have on the topic?

In this example, we identify two disciplines that have something to say about the role of sports in society: allied health and education. What would each of these disciplines raise as key questions or issues related to that topic?

2.1.1.1 Nursing

- how sports affect individuals' health and well-being
- assessing and treating sports injuries
- physical conditioning for athletes

2.1.1.2 Education

- how schools privilege or punish student athletes

- how young people are socialized into the ideal of team cooperation
- differences between boys' and girls' participation in organized sports

We see that a single topic can be approached from many different perspectives depending on how the disciplinary boundaries are drawn and how the topic is framed. This step of the research process requires you to make some decisions early on to focus the topic on a manageable and appropriate scope for the rest of the strategy. (Hansen & Paul, 2015).

'The literature' consists of the published works that document a scholarly conversation in a field of study. You will find, in 'the literature,' documents that explain the background of your topic so the reader knows where you found loose ends in the established research of the field and what led you to your own project. Although your own literature review will focus on primary, peer-reviewed resources, it will begin by *first* grounding yourself in background subject information generally found in secondary and tertiary sources such as books and encyclopedias. Once you have that essential overview, you delve into the seminal literature of the field. As a result, while your literature review may consist of research articles tightly focused on your topic with secondary and tertiary sources used more sparingly, all three types of information (primary, secondary, tertiary) are critical to your research.

2.1.2 DEFINITIONS

- Theoretical – discusses a theory, conceptual model or framework for understanding a problem.
- Empirical – applies theory to a behavior or event and reports derived data to findings.
- Seminal – "A classic work of research literature that is more than 5 years old and is marked by its uniqueness and contribution to professional knowledge." (Houser, 4th ed., 2018, p. 112).
- Practical – "…accounts of how things are done" (Wallace & Wray, 3rd ed., 2016, p. 20). Action research, in Education, refers to a wide variety of methods used to develop practical solutions. (Great Schools Partnership, 2017).
- Policy – generally produced by policy-makers, such as government agencies.
- Primary – published results of original research studies .
- Secondary – interpret, discuss, summarize original sources
- Tertiary – synthesize or distill primary and secondary sources. Examples include: encyclopedias, directories, dictionaries, handbooks, guides, classification, chronology, and other fact books.
- Grey literature – research and information released by non-commercial publishers,

such as government agencies, policy organizations, and think-tanks.

'The literature' is published in books, journal articles, conference proceedings, theses and dissertations. It can also be found in newspapers, encyclopedias, textbooks, as well as websites and reports written by government agencies and professional organizations. While these formats may contain what we define as 'the literature', not all of it will be appropriate for inclusion in your own literature review.

These sources are found through different tools that we will discuss later in this section. Although a discovery tool, such as a database or catalog, may link you to the 'the literature' not every tool is appropriate to every literature review. No single source will have all of the information resources you should consult. A comprehensive literature review should include searches in the following:

- Multiple subject and article databases
- Library and other book catalogs
- Grey literature sources

2.2 INFORMATION CYCLE

To get a better idea of how the literature in a discipline develops, it's useful to see how the information publication lifecycle works. These distinct stages show how information is created, reviewed, and distributed over time.

Follow the image link to view the full tutorial.

The following chart can be used to guide you in searching literature existing at various stages of the scholarly communication process (freely accessible sources are linked, subscription or subscribed sources are listed but not linked):

Guide to searching for literature at various stages of the scholarly communication process

Steps in the Scholarly Communication Process	Publication Cycle	Access Points
Research and develop idea	Unpublished documents such as lab notebooks, personal correspondence, graphs, charts, grant proposals, and other 'grey literature'	Limited access Google Scholar HSRR (Health Services and Sciences Research Resources) RePORTER (Database of NIH funded research projects) Institute of Education Sciences
Present preliminary findings	Preliminary reports: letters to the editor or journals, brief (short) communication submitted to a primary journal	PubMed (limiting search results to Letter under Limits) Web of Science (Science Citation Index)
Report research	Conference literature: preprints, conference proceedings	PapersFirst ProceedingsFirst Conference web sites Preprint services
	Research reports: master's theses, doctoral dissertations, interim or technical reports	Dissertations & Theses British Library EThOS Theses Canada Portal Electronic Theses and Dissertations Center PubMed (limiting search results to Technical Report under Limits) Current Grey Literature Report Professional association web sites OpenDOAR

Publish research	Research paper (scholarly journal articles): research papers published in peer-reviewed/ refereed journals	PubMed CINAHL PsycINFO Web of Science ERIC
Popularize research findings	Newspapers, popular magazines, TV news reports, trade publications, web sites	PubMed (limiting search results to News and Newspaper Article under Limits) Media outlets Internet search engines
Compact and repackage information	Reviews, systematic reviews, guidelines, textbooks, handbooks, yearbooks, encyclopedias	Cochrane Library Library Catalogs WorldCat

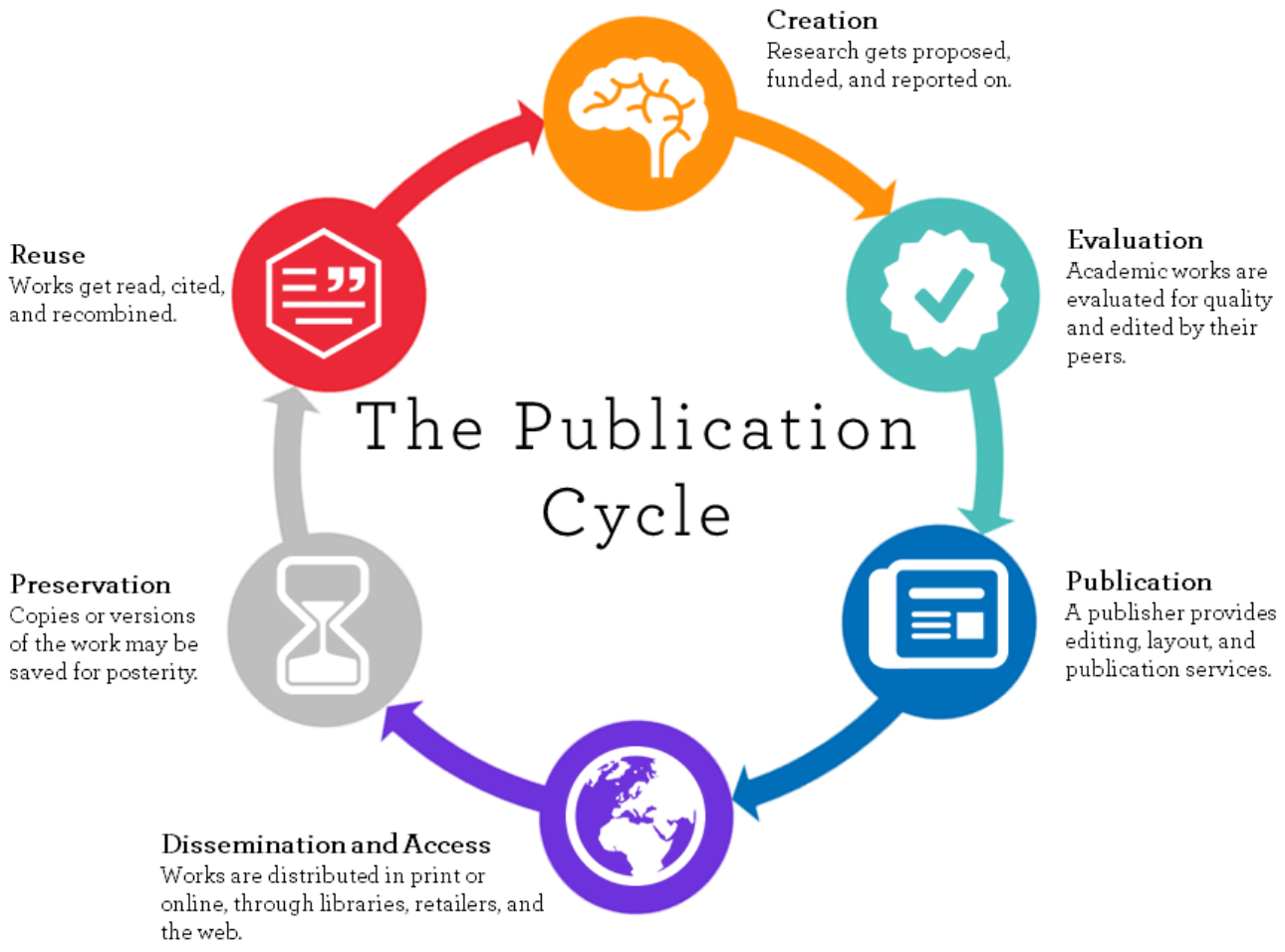


Figure 2.2 Scholarly publication cycle

2.3 INFORMATION TYPES

To continue our discussion of information sources, there are two ways published information in the field can be categorized:

- Articles by the type of periodical in which an article it is published, for example, **magazine, trade, or scholarly publications**.
- Where the material is located in the information cycle, as in **primary, secondary, or tertiary information sources**.

2.3.1 POPULAR, TRADE, OR SCHOLARLY PUBLICATIONS

2.3.1.1 Types of Periodicals

Journals, trade publications, and magazines are all periodicals, and articles from these

publications they can all look similar article by article when you are searching in the databases. It is good to review the differences and think about when to use information from each type of periodical.

2.3.1.2 Magazines

A magazine is a collection of articles and images about diverse topics of popular interest and current events.

Features of magazines:

- articles are usually written by journalists
- articles are written for the average adult
- articles tend to be short
- articles rarely provides a list of reference sources at the end of the article
- lots of color images and advertisements
- the decision about what goes into the magazine is made by an editor or publisher
- magazines can have broad appeal, like *Time* and *Newsweek*, or a narrow focus, like *Sports Illustrated* and *Mother Earth News*.

Popular **magazines** like *Psychology Today*, *Sports Illustrated*, and *Rolling Stone* can be good sources for articles on recent events or pop-culture topics, while *Harpers*, *Scientific American*, and *The New Republic* will offer more in-depth articles on a wider range of subjects. These

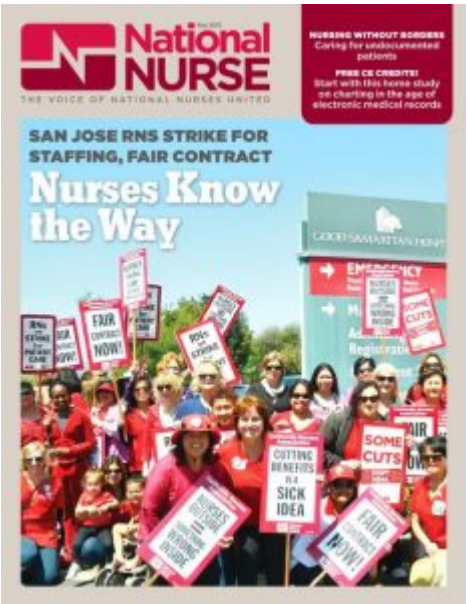
articles are geared towards readers who, although not experts, are knowledgeable about the issues presented.

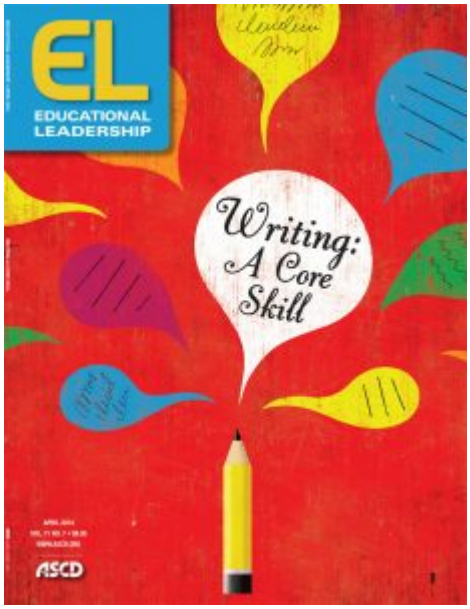
2.3.1.3 Trade Publications

Trade publications or trade journals are periodicals directed to members of a specific profession. They often have information about industry trends and practical information for people working in the field.

Features of trade publications:

- Authors are specialists in their fields
- Focused on members of a specific industry or profession
- No peer review process
- Include photographs, illustrations, charts, and graphs, often in color
- Technical vocabulary





Trade publications are geared towards professionals in a discipline. They report news and trends in a field, but not original research. They may provide product or service reviews, job listings, and advertisements.

2.3.1.4 Scholarly, Academic, and Scientific Publications

Scholarly, academic, and scientific publications are a collections of articles written by scholars in an academic or professional field. Most journals are peer-reviewed or refereed, which means a panel of scholars reviews articles to decide if they should be accepted into a

specific publication. Journal articles are the main source of information for researchers and for literature reviews.

Features of journals:

- written by scholars and subject experts
- author' credentials and institution will be identified
- written for other scholars
- dedicated to a specific discipline that it covers in depth
- often report on original or innovative research
- long articles, often 5-15 pages or more
- articles almost always include a list of sources at the end (Works Cited, References, Sources, or Bibliography) that point back to where the information was derived
- no or very few advertisements
- published by organizations or associations to advance their specialized body of knowledge

Scholarly journals provider articles of interest to experts or researchers in a discipline. An editorial board of respected scholars (peers) reviews all articles submitted to a journal. They decide if the article provides a noteworthy contribution to the field and should be published. There are typically few little or no advertisements. Articles published in scholarly journals will include a list of references.

2.3.1.5 A word about open access journals

Increasingly, scholars are publishing findings and original research in *open access journals*. *Open access journals* are scholarly and peer-reviewed and open access publishers provide unrestricted access and unrestricted use. Open access is a means of disseminating scholarly

research that breaks from the traditional subscription model of academic publishing. It is free of charge to readers and because it is online, it is available at anytime, anywhere in the world, to anyone with access to the internet. The Directory of Open Access Journals (DOAJ) indexes and provides access to high-quality, peer-reviewed scholarly articles.

In summary, newspapers and other popular press publications are useful for getting general topic ideas. Trade publications are useful for practical application in a profession and may also be a good source of keywords for future searching. Scholarly journals are the conversation of the scholars who are doing research in a specific discipline and publishing their research findings.

2.3.1.6 Primary, Secondary, and Tertiary Sources

Primary sources of information are those types of information that come first. Some examples of primary sources are:

- original research, like data from an experiment with plankton.
- diaries, journals, photographs
- data from the census bureau or a survey you have done
- original documents, like the constitution or a birth certificate
- newspapers are primary sources when they report current events or current opinion
- speeches, interviews, email, letters
- religious books
- personal memoirs and autobiographies
- art work
- pottery or weavings

There are different types of primary sources for different disciplines. In the discipline of history, for example, a diary or transcript of a speech is a primary source. In education and nursing, primary sources will generally be original research, including data sets.

Secondary sources are written about primary sources to interpret or analyze them. They are a step or more removed from the primary event or item. Some examples of secondary sources are:

- commentaries on speeches
- critiques of plays, journalism, or books
- a journal article that talks about a primary source such as an interpretation of

Steinbeck's The Grapes of Wrath, or the flower symbolism of Monet's water garden paintings

- textbooks (can also be considered tertiary)
- biographies
- encyclopedias
- websites

Tertiary sources are further removed from the original material and are a distillation and collection of primary and secondary sources. Some examples are:

- bibliography of critical works about an author
- textbooks (also considered secondary)
- factbooks
- guidebooks
- manuals

A comparison of information sources across disciplines:

SUBJECT	PRIMARY	SECONDARY	TERTIARY
Education	Journal article reporting on quantitative study of after school programs	Article in Teacher Magazine about after school programs	Handbook of afterschool programming ERIC database
Nursing	Journal article reporting on a Cclinical trial of a treatment or device	Systematic review of treatment or device, such as those found in the Cochrane Database of Systematic Reviews	Encyclopedia of Nursing Research
Psychology	Patient notes taken by clinical psychologist	Magazine article about the patient's psychological condition	Textbook on clinical psychology

2.4 INFORMATION SOURCES

In this section, we discuss how to find not only information, but the sources of information in your discipline or topic area. As we see in the graphic and chart above, the information you need for your literature review will be located in multiple places. How and where research and publication occurs drives how and where the information is located, which in turn determines how you will discover and retrieve it. When we talk about information sources for a literature review in education or nursing, we generally mean these five areas:

the internet, reference material and other books, empirical or evidence-based articles in scholarly, peer-reviewed journals, conference proceedings and papers, dissertations and theses, and grey literature.

2.4.1 WEB

The World Wide Web can be an excellent place to satisfy some initial research needs.

- It is a good resource for background information and for finding keywords for searching in the library catalog and databases.
- It is a good tool for locating professional organizations and searching for information and the names of experts in a given discipline.
- Google Scholar is a useful discovery tool for citations, especially if you are trying to get the lay of the land surrounding your topic or if you are having a problem with keywords in the databases. You can find some information to refine your search terms. It is NOT acceptable to depend on Google Scholar for finding articles because of the spotty coverage and lack of adequate search features.

2.4.2 BOOKS AND REFERENCE SOURCES

Reference materials and books are available in both **print** and **electronic** formats. They provide gateway knowledge to a subject area and are useful at the **beginning** of the research process to:

- Get an overview of the topic, learn the scope, key definitions, significant figures who are involved, and important timelines
- Discover the foundations of a topic
- Learn essential definitions, vocabulary terms, and keywords you can use in your literature searching strategy

2.4.3 SCHOLARLY ARTICLES IN JOURNALS

Another major category of information sources is scholarly information produced by subject experts working in academic institutions, research centers and scholarly organizations. Scholars and researchers generate information that advances our knowledge and understanding of the world. The research they do creates new opportunities for inventions, practical applications, and new approaches to solving problems or understanding issues.

Academics, researchers and students at universities make their contributions to scholarly knowledge available in many forms:

- masters' theses
- doctoral dissertations
- conference papers
- journal articles and books
- individual scholars' web pages
- web pages developed by the researcher's' home institution (Hansen & Paul, 2015).

Scholars and researchers introduce their discoveries to the world in a formal system of information dissemination that has developed over centuries. Because scholarly research undergoes a process of "peer review" before being published (meaning that other experts review the work and pass judgment about whether it is worthy of publication), the information you find from scholarly sources meets preset standards for accuracy, credibility and validity in that field.

Likewise, scholarly journal articles are generally considered to be among the most reliable sources of information because they have gone through a peer-review process.

2.4.5 CONFERENCE PAPERS & PROCEEDINGS

Conferences are a major source of emerging research where researchers present papers on their current research and obtain feedback from the audience. The papers presented in the conference are then usually published in a volume called a conference proceeding. Conference proceedings highlight current discussion in a discipline and can lead you to scholars who are interested in specific research areas.

A word about conference papers: several factors contribute to making these documents difficult to find. It may be months before a paper is published as a journal article, or it may never be published. Publishers and professional associations are inconsistent in how they publish proceedings. For example, the papers from an annual conference may be published as individual, stand-alone titles, which may be indexed in a library catalog, or the conference proceedings may be treated more like a periodical or serial and, therefore, indexed in a journal database.

It is not unusual that papers delivered at professional conferences are not published in print or electronic form, although an abstract may be available. In these cases, the full paper may only be available from the author or authors.

The most important thing to remember is that if you have any difficulty finding a conference proceeding or paper, ask a librarian for assistance.

2.4.6 DISSERTATIONS AND THESES

Dissertations and theses can be rich sources of information and have extensive reference lists to scan for resources. They are considered gray literature, so are not "peer reviewed". The accuracy and validity of the paper itself may depend on the school that awarded the doctoral or master's degree to the author.

2.5 CONCLUSION

In thinking about 'the literature' of your discipline, you are beginning the first step in writing your own literature review. By understanding what the literature in your field is, as well as how and when it is generated, you begin to know what is available and where to look for it.

We briefly discussed seven types of (sometimes overlapping) information:

- information found on the web
- information found in reference books and monographs
- information found in scholarly journals
- information found in conference proceedings and papers
- information found in dissertations and theses
- information found in magazines and trade journals
- information that is primary, secondary, or tertiary.

By conceptualizing or scoping how and where the literature of your discipline or topic area is generated, you have started on your way to writing your own literature review.

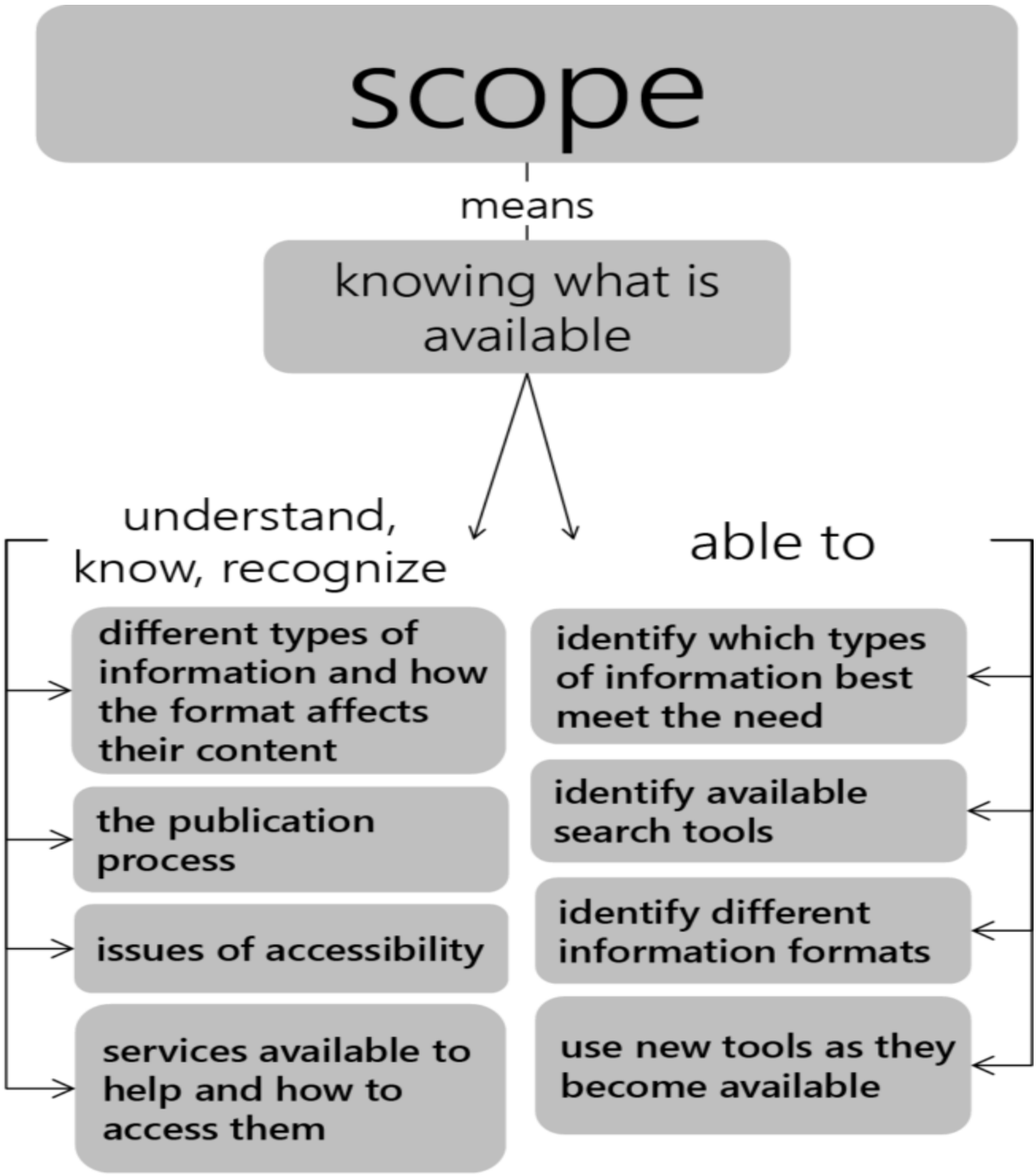


Figure 2.3 Information literacy skills

Finally, remember:

> "All information sources are not created equal. Sources can vary greatly in terms of how carefully they are researched, written, edited, and reviewed for accuracy. Common sense will help you identify obviously questionable sources, such as tabloids that feature tales of alien abductions, or personal websites with glaring typos. Sometimes, however, a source's reliability—or lack of it—is not so obvious…You will consider criteria such as the type of source, its intended purpose and audience, the author's (or authors') qualifications, the publication's reputation, any indications of bias or hidden agendas, how current the source is, and the overall quality of the writing, thinking, and design." (Writing for Success, 2015, p. 448).

We will cover how to evaluate sources in more detail in Chapter 5.

Practice

For each of these information needs, indicate what resources would be the best fit to answer your question. There may be more than one source so don't feel like you have to limit yourself to only one. See Answer Key for the correct response.

1. You are to write a brief paper on a theory that you only vaguely understand. You need some basic information. Where would you look?
2. If you heard something on the radio about a recent research involving an herbal intervention for weight loss where could you find the actual study?
3. You are going to be doing an internship in a group home for young men. You have heard that one issue that comes up for them is anger. Where would you look for practical interventions to help you manage this problem if it came up?
4. You have the opportunity to work on a research project through a grant proposal. You need to justify the research question and show that there is an interest and a need for this research. What resources would you cite in your application?
5. You have been assigned a project to find primary sources about classroom discipline used in early 20th-century schools. What primary sources could you use and where would you find them?
6. You have an idea for a great thesis but you are afraid that it has been done before. Since you would like to do something original, where could you find out if someone else has done the project?
7. There was a post on Facebook that welfare recipients in Arizona were recently tested for drug use with only three in 140,000 having positive results. Where can I find out if this number is accurate?

Test Yourself

Question 1 Match the type of periodical to its content

Trade publication
Scholarly journal
Magazine

1. Contains articles about a variety of topics of popular interest; also contains advertising.
2. Has information about industry trends and practical information for professionals in a field.
3. Contains articles written by scholars in an academic field and reviewed by experts in that field.

Question 2: Given what you know about information types and sources, put the following information sources in order from the least accurate and reliable to the most accurate and reliable. (1 least accurate/4 most accurate)

1. Books and encyclopedias
2. News broadcasts and social media directly following an event.
3. Analysis of an event in the news media or popular magazine weeks after an event.
4. Articles written by scholars and published in a journal.

Question 3: What is information called that is either a diary, a speech, original research, data, artwork, or a religious book.

1. Primary
2. Secondary
3. Tertiary
4. Empirical

Question 4: To find the best information in the databases you need to use keywords that are used by the scholars. Where do you find out what keywords to try?

1. From websites

2. In journal articles
3. In Books
4. All of the above

Question 5: Which of the following is NOT true about scholarly journals?

1. They contain the conversation of the scholars on a particular subject.
2. They are of interest to the general public.
3. The articles are followed by an extensive reference list.
4. They contain reports of original research.

REFERENCES

IMAGE ATTRIBUTION

CHAPTER 3: HOW TO GET STARTED

Learning Objectives

At the conclusion of this chapter, you will be able to:

- Develop and refine a viable research question for your literature review

3.1 TOPIC SELECTION

If the longest journey begins with the first step, most graduate-level literature reviews begin with choosing a relevant, appropriate, interesting topic about which to do the review. Whether the topic is assigned, chosen from a list of possible options, or (most likely) developed on your own, a good way to begin your thinking is to take a general issue or subject and formulate it into a question. You may want to start to think about a single aspect in your field or discipline that might be interesting to pursue, such as 'science education' or 'diabetes treatment.'

A good topic selection plan begins with a general orientation into the subject you are interested in pursuing in more depth. Although finding a good research question may initially feel like looking for a needle in a haystack, choosing a general topic is the first step.

Things to think about when choosing a topic area:

1. Pick an area of interest; pick an area of experience; or, pick an area where you know there is a need for more research.
2. It may be easier to start with "what" and "why" questions and expand on those. For example, in Nursing: what is current research on obesity and why is it significant to nursing and health sciences? Or, in Education: what is media literacy and why is it significant to education sciences?
3. If you are a teacher or other education practitioner, you might think about a current

problem in the workplace such as, classroom management or parent interaction and expand from there. Nurses may want to consider a current issue in a clinical or hospital setting, like hand washing or patient falls.

Other suggestions for choosing a topic include:

- Ask a professor, preferably one active in research, about possible topics
- Read departmental information on research interests of the faculty. Faculty research interests areas vary widely, so do some research on their past publications. Most departmental websites post faculty CVs.
- Read a research paper that interests you. The paper's literature review or background section will provide insight into the research question the author was seeking to address with his/her study. Is the research incomplete, imprecise, biased, or inconsistent? As you're reading the paper, look for what's missing. These may be "gaps in the literature" that you might explore in your own study. The conclusion or discussion section at the end may also offer some questions for future exploration. A recent blog posting in *Science* (Pain, 2016) provides several tips from researchers and graduate students on how to effectively read these papers.
- Think about papers you enjoyed researching and writing as an undergraduate and choose a topic that reflects those interests
- Sift through the table of contents of annual reviews journals in your area of interest – such as, the *Annual Review of Psychology*, the *Annual Review of Immunology*, the *Review of Research in Education*, or the *Annual Review of Nursing Research*.
- Identify and browse journals related to your research interests. Faculty and librarians can help you identify relevant journals in your field and specific areas of interest.

Although it's a good idea to avoid subjects that are too personal or emotional as these can interfere with an unbiased approach to the research, it's also important to make sure you have more than a passing interest in the topic. You will be with this literature review for an extended period of time and it will be difficult to stick with it even under the best circumstances. A graduate student in psychology said, "'My advice would be to NOT choose a topic that is an unappealing offshoot of your adviser's work or a project that you have lukewarm feelings about in general…It's important to remember that this is a marathon, not a sprint, and lukewarm feelings can turn cold quickly.'" (Dittman, 2005).

3.2 QUESTION FORMULATION

Now, take that general idea and begin to think about it in terms of a question. What do you really want to know about the topic? As a warm-up exercise, try dropping a possible topic idea into one of the blank spaces below. The questions may help bring your subject into

sharper focus and provide you with the first important steps towards developing your topic. The type of paper you want to write (Definition, Analysis, Narration, etc.) can also be a useful way to begin thinking about your research question. For example, if you're interested in parent involvement in early childhood education, your research question might be "What are the various features of parent involvement in early childhood education?" Or, if you want to do an evaluative literature review, your research question could be "What is the value of infant vaccination?"

1. What does ___ mean? (Definition)
2. What are the various features of ___? (Description)
3. What are the component parts of ___? (Simple analysis)
4. How is ___ made or done? (Process analysis)
5. How should ___ by made or done? (Directional analysis)
6. What is the essential function of ___? (Functional analysis)
7. What are the causes of ___? (Causal analysis)
8. What are the consequences of ___? (Causal analysis)
9. What are the types of ___? (Classification)
10. How is ___ like or unlike ___? (Comparison)
11. What is the present status of ___? (Comparison)
12. What is the significance of ___? (Interpretation)
13. What are the facts about ___? (Reportage)
14. How did ___ happen? (Narration)
15. What kind of person is ___? (Characterization/Profile)
16. What is the value of ___? (Evaluation)
17. What are the essential major points or features of ___? (Summary)
18. What case can be made for or against ___? (Persuasion)
19. What is the relationship between _____ and the outcome of ____? (Explorative)

For more information about how to form a research question, check out this video tutorial:

At this point, you will want to do an initial review of the existing literature to see what resources on your topic or question already exist. Based on what you find, you may decide to alter your question in some way before going too far along a path that perhaps has already been well-covered by other scholars.

3.3 RESEARCH QUESTION OR HYPOTHESIS?

Some things to keep in mind at this beginning stage of the research process is whether your literature review will be in the form of a research question or a hypothesis. One way to determine that outcome is to compare the two and decide which format will work best for you. For example, if the area you are researching is a relatively new field, and there is little or no existing literature or theory that indicates what you will find, then your literature review will likely be based on a **research question**.

3.3.1 RESEARCH QUESTION CRITERIA:

The question should express a relationship between two or more variables – for example, how is A related to B? It should be clearly stated in a question form – such as, "How do grades (A) affect participation in class (B)?" or "How does parental education level (A) affect children's vaccination status (B)?" Your literature review, in turn, may become:

Grades as a classroom participation motivator: A literature review, or

Education level and vaccinations: A literature review

Your question should also imply possibilities for empirical testing–remember, metaphysical questions are not measurable and a variable that cannot be clearly defined cannot be tested.

3.3.2 HYPOTHESIS CRITERIA:

If, however, your literature review tests something based on the findings of a large amount of previous literature or a well-developed theory, your literature review will be to test of a hypothesis, rather than answer a question. The statement should indicate an expected relationship between variables and it must be testable. State your hypothesis as simply and concisely as possible. For example, if A, then B, as in: "If patient is obese, he/she will also be deaf." (Dhanda & Taheri, 2017). Or, "For those who stutter, unusual temperament or anxiety is a causal factor." (Kefalianos, 2012)

Hypothesis criteria

Research Question	Hypothesis
Is A related to B?	If A, then B
How are A and B related to C?	If A & B, then C
How is A related to B under conditions C and D?	If A, then B under conditions C and D

Decide what type of relationship you would like to study between the variables. Now, try to express the relationship between the concepts as a single sentence–in the form of either a research question or a hypothesis.

3.4 REFINING THE QUESTION

Once you have selected your topic area and reviewed literature related to it, you may need to narrow it to something that can be realistically researched and answered. In addition to asking Who, What, When, Where, Why, and How questions, other types of questions you might begin to ask to further refine your topic include those that are: Descriptive, Differential or Comparative, Associative or Relational.

You might beginning by asking a series of **PICO** questions. Although the PICO method is used primarily in the health sciences, it can also be useful for narrowing/refining a research question in the social sciences as well. A way to formulate an answerable question using the PICO model could look something like this:

- **Patient, Population or Problem:** What are the characteristics of the patient or population? For example, gender, age, other demographics. What is the situation or disease you are interested in? For example, diabetes or classroom management
- **Intervention or exposure:** What do you want to do with the patient, person, or

population (e.g. treat, diagnose, observe)? Such as, observe classroom behavior or reaction to a specific type of treatment

- **Comparison:** What is the alternative to the intervention (e.g. placebo, different drug, surgery)? For example, how does a sample group that is assigned homework compare to a similar group that is not assigned homework?

- **Outcome:** What are the relevant outcomes (e.g. morbidity, death, complications)? For example, how do lower cholesterol numbers or improved scores in spelling impact the target population?

Some examples of how the PICO method is used to refine a research question include:

- **Education**: "Is play-based learning an effective approach in early childhood education? – Population (early childhood) / Intervention (play-based learning)," or "Can music therapy help autistic students improve their communication skills? – Population (autistic students / intervention (music therapy)"
- **Nursing**: "What is the effect of a dressing with silver in its composition on the treatment of diabetic foot ulcers? – Population (patients with diabetes) / Intervention (dressings made with silver)" or "How effective are antidepressive medications on anxiety and depression? – Intervention (antidepressants) / Population (patients with anxiety and depression)"

Another mnemonic technique used in the social sciences for narrowing a topic is **SPICE**. An example of how SPICE factors can be used to develop a research question is given below:

Setting – for example, Canada
Perspective – for example, Adolescents
Intervention – for example, Text message reminders
Comparisons – for example, Telephone message reminders
Evaluation – for example, Number of homework assignments turned in after text message reminder compared to the number of assignments turned in after a telephone reminder

Likewise, developing a concept map or mind map around your topic may help you analyze your question and determine more precisely what you want to research. Using this technique, start with the broad topic, issue, or problem, and begin writing down all the words, phrases and ideas related to that topic that come to mind and then 'map' them to the original idea.

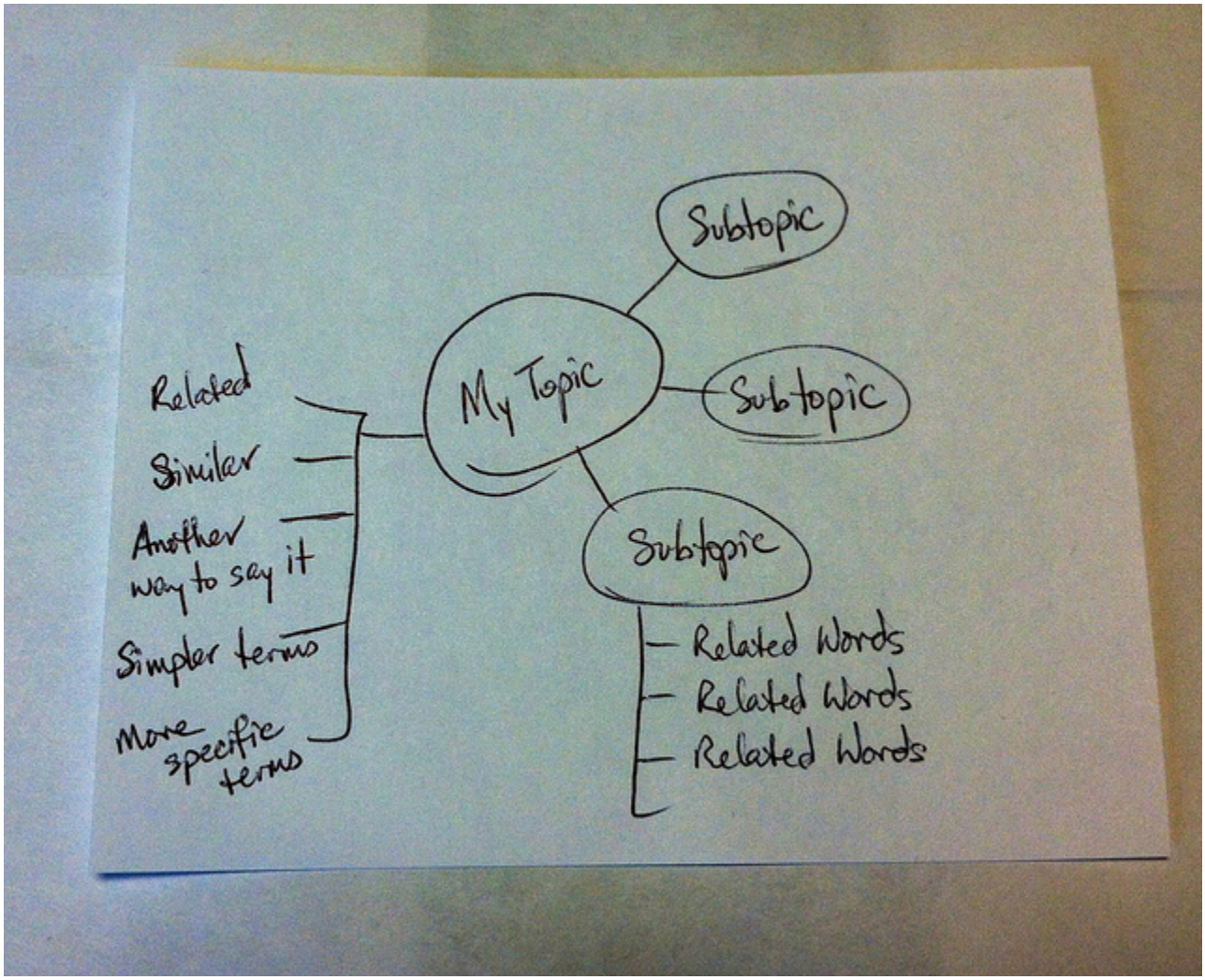


Figure 3.1 Basic concept map

This mapping technique aims to improve the "description of the breadth and depth of literature in a domain of inquiry. It also facilitates identification of the number and nature of studies underpinning mapped relationships among concepts, thus laying the groundwork for systematic research reviews and meta-analyses." (Lesley, Floyd, & Oermann, 2002; D'Antoni & Pinto Zipp, G., 2006). Its purpose, like the other methods of question refining, is to help you organize, prioritize, and integrate material into a workable research area; one that is interesting, answerable, realistic in terms of resource availability and time management, objective, scholarly, original, and clear.

Check out this YouTube video for more basic information on how to map your research question:

In addition to helping you get started with your own literature review, the techniques described here will give you some keywords and concepts that will be useful when you begin searching the literature for relevant studies and publications on your topic.

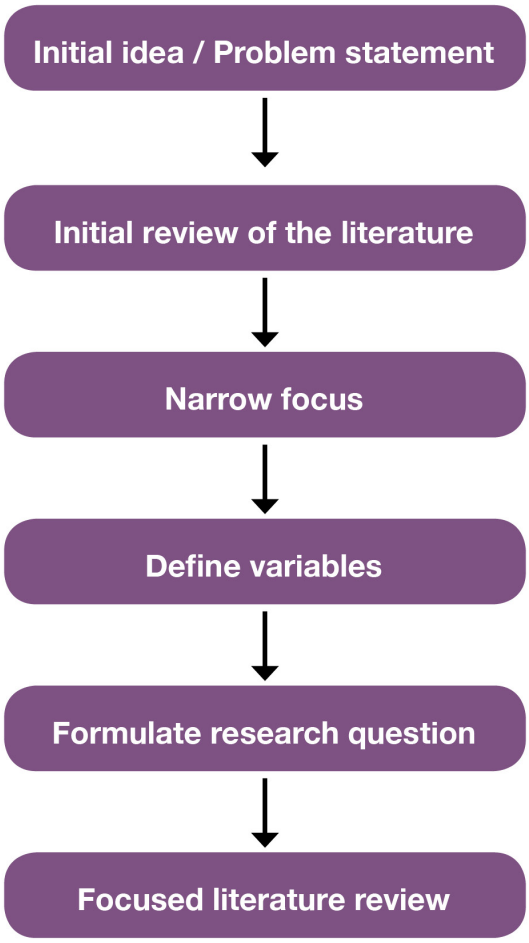


Figure 3.2 Basic literature review process

For example, perhaps your initial idea or interest is 'how to prevent obesity.' After an initial search of the relevant nursing literature, you realize the topic of 'obesity' is too broad to adequately cover in the time you have to do your literature review. You decide to narrow your focus to 'causes of childhood obesity.' Using PICO factors you further narrow your search to 'the influence of family factors on overweight children.' A potential research question might then be "What maternal factors are associated with toddler obesity in the United States?" You're now ready to begin searching the literature for studies, reports, cases, and other information sources that relate to this question.

Similarly, for a broad topic like 'school performance' or 'grades,' and after an initial literature search that provides some variables, examples of a narrow research question might be:

- "To what extent does parental involvement in children's education relate to school performance over the course of the early grades?"
- "Do parental involvement levels differ by family social, demographic, and contextual

characteristics?"

- " What forms of parent involvement are most highly correlated with children's outcomes? What factors might influence the extent of parental involvement?" (Early Childhood Longitudinal Program, 2011).

Practice

Take a general topic such as "Reading Comprehension" or "Hospital Falls" and identify a slightly more narrow concept by using the questions provided in the worksheet.

- Next refine your topic further by choosing one of the PICO factors
- Now practice writing your topic as a research question or hypothesis
- Is your question or hypothesis interesting, answerable, and clear? Ask a classmate to read your question or hypothesis and explain to you what the research will be.

Good question? | Bad question? | Why?

Each of the questions below has advantages and disadvantages. Based on some of the criteria for formulating a research question discussed in this section, which of the following questions seems the most viable for further study and why? See the Answer Key for the correct responses

1. **Education**: Do adult learners in a rural adult education setting have characteristics that are similar to adult learners in general
2. **Education**: What are the characteristics of rural adult learners in an adult education program?
3. **Education**: How does the U.S. Department of Education serve rural learners?

Look at these recent publications in the literature for nursing and education. Can you spot the research question? Which PICO factors were used in each example?

1. **Nursing**: Workplace Hazards Faced by Nursing Assistants in the United States: A Focused Literature Review. (Walton, A., & Rogers, B., 2017).
2. **Nursing**: What are the family needs when a parent has mental health problems? Evidence from a systematic literature review. (Wahl, et al., 2017).
3. **Education**: Music in Peacebuilding: A Critical Literature Review (Sandoval, 2016).

4. **Nursing**: Health literacy programs for older adults: A systematic literature review (Manafo & Wong, 2012).
5. **Education**: English language learners and reading instruction: A review of the literature. (Snyder, Witmer, & Schmitt, 2017).
6. **Nursing**: Cultural interventions to treat addictions in indigenous populations: Findings from a scoping study. (Rowan et al, 2014).

Test Yourself

See the Answer Key for the correct response.

Question 1: This is an effective research question: Do school breakfast programs in Washington and Oregon differ? Choose True or False

- True
  False

Question 2. Which of the two questions below is more effective? Choose A or B

1. Are females smarter than males?
2. Do females aged 18-36 score higher on the Graduate Record Exam than adult males between the ages of 18-35?

Question 3. Which of the following research question is more effective? Choose A or B

1. Five methods of assessing nursing students' critical thinking skills within the context of clinical practice are: 1) Observation, 2) Questions, 3) Conferences, 4) Problem-solving strategies, and 5) written assignments. The literature is reviewed on each of these methods.
2. Critical thinking is an important competency needed by nursing students. Varied methods can be used for assessing critical thinking.

Question 4. This is the research question: What impact has the No Child Left Behind (NCLB) program had on high school graduation rates?

What information sources will I need to find to begin my literature review? Choose A, B, C, or D.

1. statistics on graduation rates before and after the program went into effect
2. statistics on the success or failure of other retention programs
3. information about government education programs before and after the era of NCLB
4. all of the above

Question 5. Is the scope of this information reasonable:

I will review 30 online nursing training programs developed over a span of 10 years? Choose Yes or No

Yes or **No**

Question 6. PICO questions are a good way to narrow your research focus. What does PICO mean? Choose 1, 2, 3, or 4

1. Parents, Intermediaries, Corporations, Oscillations
2. Populations, Interventions, Comparisons, Outcomes
3. Problems, Instruments, Channels, Operations
4. Patients, Interference, Courses, Origins

REFERENCES

IMAGE ATTRIBUTION

CHAPTER 4: WHERE TO FIND THE LITERATURE

Learning Objectives

At the conclusion of this chapter, you will be able to:

- Search a library catalog to locate electronic and print books.
- Search databases to find scholarly articles, dissertations, and conference proceedings.
- Retrieve a copy or the full text of information sources
- Identify and locate core resources in your discipline or topic area

4.1 OVERVIEW OF DISCOVERY

Discovery, or background research, is something that happens at the beginning of the research process when you are just learning about a topic. It is a search for general information to get the big picture of a topic for exploration, ideas about subtopics and context for the actual focused research you will do later. It is also a time to build a list of distinctive, broad, narrow, and related search terms.

Discovery happens again when you are ready to focus in on your research question and begin your own literature review. There are two crucial elements to discovering the literature for your review with the least amount of stress as possible: **the places you look** and **the words you use in your search**.

The **places you look** depend on:

- The stage you are in your research
- The disciplines represented in your research question
- The importance of currency in your research topic

Review the information and publication cycles discussed in Chapter 2 to put those sources of this information in context.

The **words you use** will help you locate existing literature on your topic, as well as topics that may be closely related to yours. There are two categories for these words:

- Keywords – the natural language terms we think of when we discuss and read about a topic
- Subject terms – the assigned vocabulary for a catalog or database

The words you use during both the initial and next stage of discovery should be recorded in some way throughout the literature search process. Additional terms will come to light as you read and as your question becomes more specific. You will want to keep track of those words and terms, as they will be useful in repeating your searches in additional databases, catalogs, and other repositories. Later in this chapter, we will discuss how putting the two elements (the places we look and the words we use) together can be enhanced by the use of Boolean operators and discipline-specific thesauri.

Discovery is an iterative process. There is not a straight, bright line from beginning to end. You will go back into the literature throughout the writing of your literature review as you uncover gaps in the evidence and as additional questions arise.

Figure 4.1

4.2 FINDING SOURCES: PLACES TO LOOK

Let's take some time to look at where the information sources you need for your literature review are located, indexed, and stored. At this stage, you have a general idea of your research area and have done some background searching to learn the scope and the context of your topic. You have begun collecting keywords to use in your later searching. Now, as you focus in on your literature review topic, you will take your searches to the databases and other repositories to see what the other researchers and scholars are saying about the topic.

The following resources are ordered from the more general and established information to the more recent and specific. Although it is possible to find some of these resources by searching the open web, using a search engine like Google or Google Scholar, this is not the most efficient or effective way to search for and discover research material. As a result, most of the resources described in this section are found from within academic library catalogs and databases, rather than internet search engines.

4.2.1 FINDING BOOKS AND EBOOKS

4.2.1.1 Books

Look to books for broad and general information that is useful for background research. Books are "essential guides to understanding theory and for helping you to validate the need for your study, confirm your choice of literature, and certify (or contradict) its findings." (Fink, 4th ed., 2014, p. 77). In this section, we will consider print and electronic books as well as print and electronic encyclopedias.

> Most academic libraries use the Library of Congress classification system to organize their books and other resources. The Library of Congress classification system divides a library's collection into 21 classes or categories. A specific letter of the alphabet is assigned to each class. More detailed divisions are accomplished with two and three letter combinations. Book shelves in most academic libraries are marked with a Library of Congress letter-number combination to correspond to the Library of Congress letter-number combination on the spines of library materials. This is often referred to as a call number and it is noted in the catalog record of every physical item on the library shelves. (Bennard et al, 2014a)

The Library of Congress (LC) classification for Education (General) is L7-991, with LA, LB, LC, LD, LE, LG, LH, LJ, and LT subclasses. For example,

> LB3012.2.L36 1995
> *Beyond the Schoolhouse Gate: Free Speech and the Inculcation of Values*

In Nursing, the LC subject range is RT1-120. A book with this LC call number might look like: R121.S8 1990 *Stedman's Medical Dictionary*. Areas related to nursing that are outside that range include:

> R121 Medical dictionaries
>
> R726.8 Hospice care
>
> R858-859.7 Medical informatics
>
> RB37 Diagnostic and laboratory tests
>
> RB115 Nomenclature (procedural coding – CPT, ICD9)
>
> RC69-71 Diagnosis
>
> RC86.7 Emergency medicine
>
> RC266 Oncology nursing
>
> RC952-954.6 Geriatrics

RD93-98 Wound care

RD753 Orthopedic nursing

RG951 Maternal child nursing / Obstetrical nursing

RJ245 Pediatric nursing

RM216 Nutrition and diet therapy

RM301.12 Drug guides

In most libraries, there is a collection of reference material kept in a specific section. These books, consisting of encyclopedias, dictionaries, thesauri, handbooks, atlases, and other material contain useful background or overview information about topics. Ask the librarian for help in finding an appropriate reference book. Although reference material can only be used in the library, other print books will likely be in what's called the "circulating collection," meaning they are available to check out.

4.2.1.2 Ebooks

The library also provides access to electronic reference material. Some are subject specific and others are general reference sources. Although each resource will have a different "look" just as different print encyclopedias and dictionaries look different, each should have a search box. Most will have a table of contents for navigation within the work. Content includes pages of text in books and encyclopedias and occasionally, videos. In all cases you will be able to collect background information and search terms to use later.

North American academic libraries buy or subscribe to individual ebook titles as well as collections of ebooks. Ebooks appear on various publisher and platforms, such as Springer, Cambridge, ebrary (ProQuest), EBSCO, and Safari to name a few. Although access to these ebooks varies by platform, you can find the ebook titles your library has access to through the library catalog. You can generally read the entire book online, and you can often download single chapters or a limited number of pages. You may be able to download an entire ebook without restrictions, or you may have to 'check it out' for a limited period of time. Some downloads will be in PDF format, others use another type of free ebook viewing software, like ePUB. Unlike public library ebook collections, most academic library ebooks are not be downloadable to ereader devices, such as Amazon's Kindle

4.2.1.3 The Library Catalog

In general, everything owned or licensed by a library is indexed in "the library catalog". Although most library catalogs are now sophisticated electronic products called 'integrated

library systems', they began as wooden card filing cabinets where researchers could look for books by author, title, or subject.

Figure 4.2

While the look and feel of current integrated library systems vary between libraries, they operate in similar ways. Most library catalogs are quickly found from a library's home page or website. The library catalog is the quickest way to find books and ebooks on your topic.

Here are some general tips for locating books in a library catalog:

- Use the search box generally found on a library's home page to start a search.
- Type a book title, author name, or subject keywords into the search box.
- You will be directed to a results page.
- If you click on a book title or see an option to see more details about the book, you can look at its full bibliographic record, which provides more information about the book, as well as where to find the book. Pay particular attention to subjects associated with the item, adding relevant and appropriate terms to your list of search terms for future use.
- If you want to have more control over search results, you can try an "Advanced Search" within the library catalog
    - Look for an "Advanced Search" option near the basic or single search box
    - The options within the advanced catalog search window allow you to limit searches by:
        - Publication Year

    - Subject
    - Call number
    - And more…
- There is generally a "Format" list on the advanced search page screen. This list will give you options for limiting format to Print Books or Ebooks.
- You can limit searches to a specific library or libraries to narrow by location or 'search everything' to broaden your search.

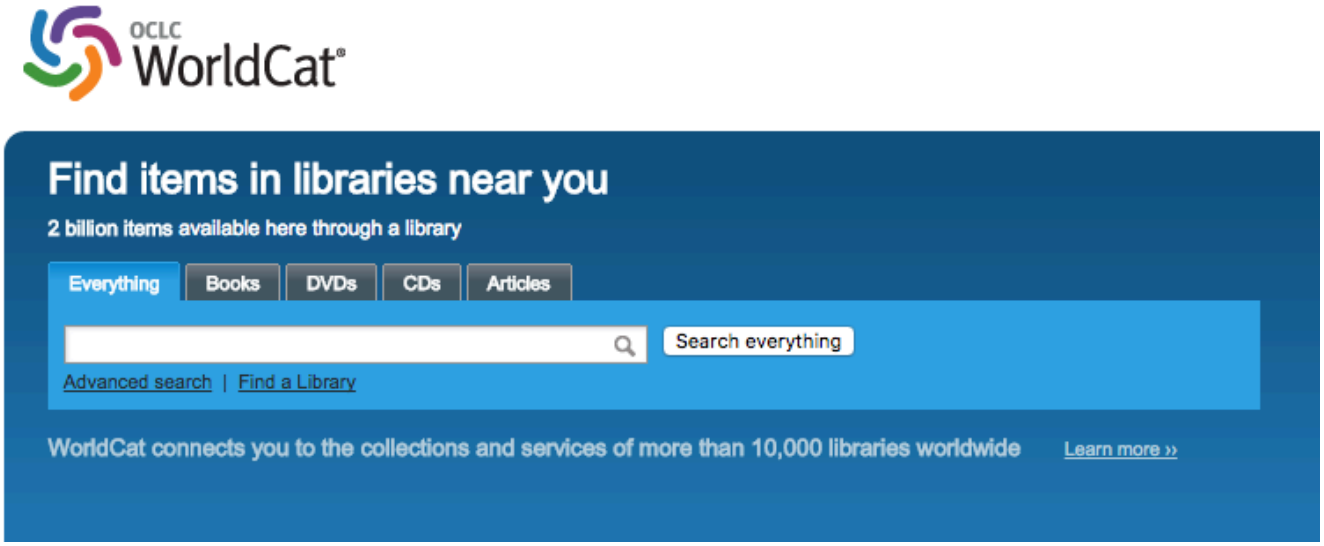


Figure 4.3

OCLC WorldCat (https://www.worldcat.org/) is the world's largest network of library content and it provides another way to search for books and ebooks. For students who do not have immediate access to an academic library catalog, WorldCat is a way to search many library catalogs at once for an item and then locate a library near you that may own or subscribe to it. Whether you will be able check the item out, request it, place an interlibrary loan request for it, or have it shipped will depend on local library policy. Note that like your own library catalog, WorldCat has a single search box, an Advanced search feature, and a way to limit by format and location.

4.2.2 FINDING SCHOLARLY ARTICLES

While books and ebooks provide good background information on your topic, the main body of the literature in your research area will be found in academic journals. Scholarly journals are the main forum for research publication. Unlike books and professional magazines that may comment or summarize research findings, articles in scholarly journals are written by a researcher or research team. These authors will report in detail original study findings, and will include the data used. Articles in academic journals also go through a screening or

peer-review process before publication,implying a higher level of quality and reliability. For the most current, authoritative information on a topic, scholars and researchers look to the published, scholarly literature. That said,

> Journals, and the articles they contain, are often quite expensive. Libraries spend a large part of their collection budget subscribing to journals in both print and online formats. You may have noticed that a Google Scholar search will provide the citation to a journal article but will not link to the full text. This happens because Google does not subscribe to journals. It only searches and retrieves freely available web content. However, libraries do subscribe to journals and have entered into agreements to share their journal and book collections with other libraries. If you are affiliated with a library as a student, staff, or faculty member, you have access to many other libraries' resources, through a service called interlibrary loan. Do not pay the large sums required to purchase access to articles unless you do not have another way to obtain the material, and you are unable to find a substitute resource that provides the information you need. (Bennard et al, 2014a)

4.2.2.1 Databases

A database is an electronic system for organizing information. Journal databases are where the scholarly articles are organized and indexed for searching. Anyone with an internet connection has free access to public databases such as PubMed and ERIC. Students can also search in library-subscribed general information databases (such as EBSCO's Academic Search Premier) or a specialized or subject specific database (for example, a ProQuest version of CINAHL for Nursing or ERIC for Education).

Library databases store and display different types of information sets than a library catalog or Google Scholar. There are different types of databases that include:

- Indexes– with citations only
- Abstract databases – with citations and abstracts only
- Full text databases – with citations and the full text of articles, reports, and other materials

Library databases are often connected to each other by means of a "link resolver", allowing different databases to "talk to each other." For example, if you are searching an index database and discover an article you want to read in its entirety, you can click on a link resolver that takes you to another database where the full-text of the article is held. If the full-text is not available, an automated form to request the item from another library may be an option.

Why search a database instead of Google Scholar or your library catalog? Both can lead you to good articles BUT:

- The content is wide-ranging but not comprehensive or as current as a database that may be updated daily.

- Google Scholar doesn't disclose its criteria for what makes the results "scholarly' and search results often vary in quality and availability.
- Neither gives you as much control over your search as you get in a database.

4.2.2.2 Citation searches

Another way to find additional books and articles on your topic is to mine the reference lists of books and articles you already found. By tracing literature cited in published titles, you not only add to your understanding of the scholarly conversation about your research topic but also enrich your own literature search.

A citation is a reference to an item that gives enough information for you to identify it and find it again if necessary. You can use the citations in the material you found to lead you to other resources. Generally, citations include four elements:

- Author
- Title
- Source
- Date

For example,

Figure 4.4 Article citation

For a good summary of how to read a citation for a book, book chapter, and journal article in both APA and MLA format, see this explanation at: https://www.slideshare.net/opensunytextbooks/gathering-components-of-a-citation

4.2.3 FINDING CONFERENCE PAPERS

Conference papers are often overlooked because they can be difficult to locate in full-text. Sometimes the papers from an annual proceeding are treated like an individual book, or a single special issue of a journal. Sometimes the papers from a conference are not published and must be requested from the original author. Despite publication inconsistency,