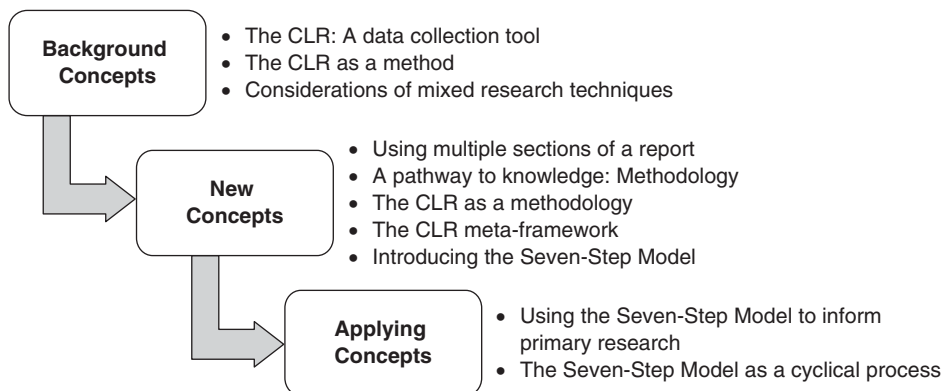


# 3

## METHODOLOGY OF THE LITERATURE REVIEW

### CHAPTER 3 ROADMAP



## BACKGROUND CONCEPTS

### THE CLR: A DATA COLLECTION TOOL

The word *data* refers to a body of information. This body of information can be extracted from many sources such as words, numbers, images, hyperlinks, audio, and video. Therefore, the information that the literature reviewer collects to inform a literature review represents data. Thus, it stands to reason that the literature review process can be viewed as a data collection tool—that is, as a means of collecting a body of information pertinent to a topic of interest. As a data collection tool, the literature review involves activities such as identifying, recording, understanding, meaning-making, and transmitting information. Indeed, the literature review process is actualized through data collection. In its optimal form, the literature review represents a formal data collection process wherein information is gathered in a comprehensive way.

### THE CLR AS A METHOD

In the field of research, the term *method* represents the specific approaches and procedures that the researcher systematically utilizes that are manifested in the research design, sampling design, data collection, data analysis, data interpretation, and so forth. The literature review represents a method because the literature reviewer chooses from an array of strategies and procedures for identifying, recording, understanding, meaning-making, and transmitting information pertinent to a topic of interest. Moreover, as asserted by Onwuegbuzie, Leech, and Collins (2011), conducting a literature review is equivalent to conducting a research study, with the information that the literature reviewer collects representing the data. In fact, as is the case for *all* studies, the literature review involves the following four phases that we discussed in Chapter 1, namely, conceptualization, planning, implementation, and dissemination. As such, when the literature review stands alone (i.e., independent work), then the literature review represents a single research study that ends when the literature review process ends. In contrast, when the goal of the literature review is to inform primary research, then the literature review represents an

embedded study. Therefore, essentially, all studies that contain a review of the literature, however large or small, actually involve the conduct of two studies: a study of the previous knowledge (i.e., review of the literature) and the primary research study conducted by the researcher(s)—with the literature review study being embedded within the primary research study. With this in mind, as we stated in Chapter 1, researchers should no longer view the literature review as one step of the many steps that underlie a research study; rather, the researcher should view the literature review as representing an embedded study.

### CONSIDERATIONS OF MIXED RESEARCH TECHNIQUES

As you will see in the subsequent chapters, in its optimal form, the literature review not only represents a study; it also represents a mixed research study. In other words, the CLR is facilitated by using *mixed research techniques*—that is, by collecting and analyzing *both* quantitative and qualitative information within the same literature review. Traditionally, as noted in Chapter 1, many textbook authors give the impression that the literature review always varies with the type of primary study (Myth 9) and that it involves not only just *summarizing* the extant literature (Myth 6) but also merely summarizing the *findings* of previous (related) studies. Such myths falsely give the impression that only quantitative data should be summarized in quantitative research-based works and only qualitative data should be summarized in qualitative research-based works. As such, a literature reviewer who summarizes only quantitative research findings only will use quantitative data to inform the literature review. As discussed in Chapter 2, a literature reviewer prescribing to this myth likely might conduct what Gene Glass (1976) coined a meta-analysis, wherein the literature reviewer combines quantitative findings from as many available individual quantitative research studies as possible that address a set of related research hypotheses for the purpose of integrating the results. Conversely, a literature reviewer who summarizes only qualitative research findings only will use qualitative data to inform the literature review. For instance, a literature reviewer belonging to this camp might conduct

what Sandelowski and Barroso (2006) refer to as a meta-synthesis, whereby the literature reviewer integrates qualitative research findings from selected

qualitative research studies that represent interpretive syntheses of data addressing a set of related research questions for the purpose of integrating the results.

## NEW CONCEPTS

A literature review in its most *comprehensive form* includes a synthesis of quantitative findings stemming from quantitative research studies and qualitative findings stemming from qualitative research studies. Synthesizing both quantitative and qualitative findings within the same literature review automatically renders the literature review process as a mixed research study (Onwuegbuzie, Collins, et al., 2010).

## USING MULTIPLE SECTIONS OF A REPORT

The CLR as a mixed research study is enhanced by recognizing that meaning-making can occur from any aspect of a work (e.g., research article, book chapter, book), including the title, abstract, literature review section, theoretical or conceptual framework, purpose statement(s), research question(s), hypotheses, statement of the educational significance, method section (e.g., participants, instruments, procedure, research design, analysis), results section, and discussion section. These sections contain quantitative and/or qualitative information. For example, at the very least, the following elements contain quantitative information:

- findings pertaining to each quantitative study presented in the literature review section of the source
- sample size(s) pertaining to one or more of the studies
- quantitative and/or qualitative studies presented in the literature review section of the source
- findings in the results section of each quantitative study selected for the literature review section

Also, the following elements of the research study contain qualitative information:

- findings pertaining to each qualitative study presented in the literature review section of the source
- the literature review section of each quantitative, qualitative, or mixed research study presented in the literature review section of the source

- information about the sample characteristics pertaining to each quantitative, qualitative, or mixed research study presented in the literature review section of the source
- conclusion section of each quantitative, qualitative, or mixed research study presented in the literature review section of the source; and findings in the results section of each qualitative study presented in the literature review section

Because of the array of quantitative and qualitative data that are potentially inherent in each work, *every* literature review lends itself simultaneously to the analysis of quantitative and qualitative information. As such, every literature review optimally involves using mixed research techniques. Simply put, then, the literature review represents a mixed research study. A literature reviewer might use quantitative research approaches to synthesize quantitative-based works and qualitative research approaches to synthesize qualitative-based works. With regard to quantitative research techniques, for instance, a literature reviewer might utilize *correlational research techniques* to examine, across studies, the relationship between the size of the effect of a reading intervention on reading achievement and the mean age of the students exposed to the intervention. With respect to qualitative research approaches, for example, a literature reviewer might utilize case study techniques for the collection of qualitative information, wherein each source represents a case. And, adopting Stake's (2005) typology, the literature review can be framed as an *intrinsic case study* (i.e., the literature review is designed to select

sources of information that highlight particular cases of interest [e.g., illustrative case, deviant case]), an **instrumental case study** (i.e., the literature review is designed to examine a particular case for the main purpose of providing insight into a phenomenon or issue, or to obtain a generalization), or a **collective/multiple case study** (i.e., the literature review is designed to examine multiple cases in an attempt to examine a phenomenon)—with the instrumental case study being the most common qualitative method that can be mapped onto the literature review process.

In fact, literature reviewers have at their disposal many quantitative and qualitative research designs, which have been identified in Chapter 1. In any case, whatever combination of quantitative and qualitative research approaches is used to conduct the literature review, it is clear that the CLR represents a mixed research study. Thus, bearing in mind the 350-year history of formal literature reviews, we are surprised that the literature review has not been framed as a mixed research study until recently. In fact, building on the seminal work of Heyvaert et al. (2011), similar to the typologies presented in Chapter 2 of narrative and systematic reviews, we have identified only seven frameworks that apply the principles of mixed research, namely, what (a) Whittemore and Knafl (2005) called *integrative review*; (b) Gaber (2000) called *meta-needs assessment*; (c) Harden and Thomas (2010) called *mixed methods synthesis*; (d) Sandelowski, Voils, and Barroso (2006) called *mixed research synthesis*; (e) Pluye, Gagnon, Griffiths, and Johnson-Lafleur (2009) called *mixed studies review*; (f) Pawson, Greenhalgh, Harvey, and Walshe (2005) called *realist review*; and, most recently, (g) Onwuegbuzie, Collins, et al. (2010) also called a mixed research synthesis.

## A PATHWAY TO KNOWLEDGE: METHODOLOGY

One aspect that all cultures have shared throughout time is a quest for knowledge. An important pathway to knowledge is via a framework called **methodology**. There are many ways of defining methodology. For example, methodology can be defined as “the branch of logic that deals with the principles of the formation of knowledge” (*American Heritage Dictionary*, 1993, p. 858) or as “a body of practices, procedures, and rules in

a discipline or an inquiry”; also, as “a set of working methods” or “the study or theoretical analysis of such working methods” (p. 858). Alternatively stated, a methodology is a broad approach to scientific inquiry that contains a system or set of practices, methods, rules, and principles within a given field (e.g., social and behavioral science) or discipline (e.g., sociology). Some authors use *methodology* and *methods* interchangeably; yet, these two concepts are very different. In fact, methods represent merely one component of methodology.

## METHODOLOGY CONCEPTUALIZED

In her seminal article, Greene (2006) conceptualized that the development of a methodology for the study of human beings necessitates consideration of the following four inter-related but conceptually distinct domains: (a) philosophical assumptions and stances, (b) inquiry logics, (c) guidelines for research practice, and (d) sociopolitical commitments (see also Greene, 2008). The first domain, **philosophical assumptions and stances**, refers to the core philosophical or epistemological beliefs associated with the methodology. This domain also includes beliefs regarding axiomatic elements, including the following: **epistemology** (i.e., study of the nature and scope of knowledge), pertaining to issues such as the relationship between the knower and the known; **ontology** (i.e., nature of reality), relating to issues such as single versus multiple-constructed realities, and subjectivity versus objectivity; and **axiology** (i.e., study of values), pertaining to issues such as the role of values in research. Consequently, the domain of philosophical assumptions and stances “guides the inquirer’s gaze to look at particular things in particular ways and offers appropriate philosophical and theoretical justification for this way of seeing, observing, and interpreting” (Greene, 2006, p. 93).

According to Greene (2006), **inquiry logics**, the second domain, involve the identification of appropriate research goals, research objectives, research purposes, and research questions; appropriate sampling designs; broad research designs and procedures; criteria of quality for inferences; and standards for reporting findings. In addition, this domain involves identifying logics of justification for each of these research strategies, with an overall logic connecting all the research elements in a coherent way.

The third domain, *guidelines for research practice*, provides specific research strategies. Here, the philosophical assumptions and stances (Domain 1) and logics of inquiry (Domain 2) are translated into specific research procedures. Thus, guidelines for research practice represent the *how to* of research, which includes procedures relating to sampling schemes, research designs, data collection, data analysis, and data interpretation that emanate from Domain 2. Domain 3 also includes specific procedures for collecting (e.g., surveys, interviews), analyzing (e.g., correlation, method of constant comparison), interpreting, and reporting data. Therefore, guidelines for research practice provide the nuts and bolts of the research study.

The fourth domain, *sociopolitical commitments*, addresses whose interests should be served by the particular research approach, where the investigation is situated in society, whether the study contributes to collective theoretical knowledge, whether the investigation generates knowledge, whether the study informs governmental decision makers and stakeholders, whether the study is located in a protected space that is free from political dispute, and whether the study lies somewhere among competing elements that represent social critique or advocacy for particular interests, viewpoints, and subgroups. The domain of sociopolitical commitments plays an important role in situating the research in society. According to Greene

## TOOL: OVERVIEW OF FOUR DOMAINS OF A METHODOLOGY

The four domains are summarized in Table 3.1. As a set, these four domains provide a unified and interactive framework and a set of practical guidelines for a methodology. Also, these domains have been fully developed with respect to both the quantitative and qualitative research traditions. In recent years, these domains have begun to be fully developed with respect to mixed research, which still represents an emerging methodology.

**Table 3.1** Four domains that drive the development of a methodology

Domain	Description
Philosophical assumptions and stances	This domain refers to the core philosophical or epistemological assumptions of the methodology. This domain “guides the inquirer’s gaze to look at particular things in particular ways and offers appropriate philosophical and theoretical justification for this way of seeing, observing, and interpreting” (Greene, 2006, p. 93).
Inquiry logics	This domain pertains to what traditionally is called <i>methodology</i> . It guides the researcher’s “gaze” such that “what is important to see...is observed, recorded, and understood or explained in defensible ways” (Greene, 2006, p. 93).
Guidelines for research practice	This domain provides specific strategies for inquiry practice. Here, the first two domains are converted into specific research procedures. Thus, guidelines for research practice represent the <i>how to</i> of research, including procedures pertaining to sampling schemes, research designs, data collection, and data analysis that emanate from Domain 2.
Sociopolitical commitments	This domain involves delineation and justification of how the research is located in society. It “importantly directs the inquirer’s journey toward a particular destination, as it identifies priority roles for social science in society and provides values-based rationales and meanings for the practice of social inquiry. While values are present in all four domains, they are proclaimed in Domain 4” (Greene, 2006, p. 94).

Source: “Toward a methodology of mixed methods social inquiry,” by J. C. Greene, 2006, *Research in the Schools*, 13(1), pp. 93–98.

(2006), “While values are present in all four domains, they are proclaimed in Domain 4” (p. 94).

## THE CLR AS A METHODOLOGY

When conceptualizing the definition of the literature review, we consider further the following ideas of Greene (2006):

A methodology for social inquiry gains credibility and persuasiveness when all of these domains act in concert with one another, when their interlocking connections are smooth and well oiled, when the overall presentation is strong, coherent, well articulated and thus persuasive. (p. 94)

We contend that the CLR is a methodology because of its potential to have a “coherent foundation for inquiry with tightly interconnected logics of justification, positioning, procedures, and rationales” (Greene, 2006, p. 94). Specifically, the literature review has at its root several research philosophies (Domain 1), some of which will be discussed in more detail in the next chapter.

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## EXAMPLE: POSTPOSITIVIST PHILOSOPHICAL FRAME

A literature review might be rooted in a *postpositivist philosophy*, which advocates an objective, although fallible, stance on social knowledge. Reviewers who adopt a postpositivist approach to literature reviews likely would place more emphasis on quantitative findings than on qualitative findings. Moreover, postpositivist literature reviewers would place high value on developing, testing, modifying, and expanding theory (Domain 4). So, central questions and hypotheses that drive literature reviews are represented by causal questions about the effects or outcomes of a certain human action, behavior, experience, or intervention. Further, systematic reviews are viewed by postpositivists as representing the best literature review analysis techniques for testing causal hypotheses (Domain 2), because they lead to generalizations. Underlying these systematic reviews are techniques with a long tradition such as meta-analysis (Domain 3).

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## EXAMPLE: CONSTRUCTIVIST PHILOSOPHICAL FRAME

A literature review might be rooted in a *constructivist philosophy* (e.g., social constructivists/constructionists), which often is associated with a claim that multiple, contradictory, but equally valid accounts of the same phenomenon—known as *multiple realities*—can coexist. Literature reviewers who adopt some form of constructivist approach to literature reviews likely would place more emphasis on qualitative findings than on quantitative findings. Moreover, constructivist literature reviewers would place high value on obtaining local, contextual understanding and meaning-making regarding the human experience (Domain 4). Central questions revolve around contextuality and meaning and guide the literature reviewer to construct and to reinterpret from the literature review an emic (i.e., insider’s) view of meaningfulness within the underlying context (Domain 2). Constructivist-based literature reviews are guided by well-established tenets such as inductive reasoning, detailed rich and thick description, and reflexivity (Domain 3).

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## THE INTER-DIALOGUE OF METHODOLOGY

To understand better the concept of methodology and the literature review, we might regard how music is expressed through multiple genres, such as pop music, jazz music, classical music, and so on. Oftentimes, musicians will compose and perform fusion music, which is a combination of many genres and philosophies, as well as methods. Thus, the methodology in the literature review process is similar to fusion music, and after conducting the literature review, you will have left your mark in time—like a carbon footprint. Even though you, as the literature reviewer, will explore and determine your own philosophical stance in Step 1 of the Seven-Step Model, we regard our own philosophical stances in creating this book as what Johnson (2011) recently termed *dialectical pluralism*, which is a thoughtful, eclectic integration of methods and perspectives. Dialectical pluralism is a research stance that is inspired by the way mixed methods, or multiple data, inform one and other. At times, when we study a topic that focuses directly on the lives and experiences of underserved and marginalized persons or groups, such as children/adolescents or adults needing mentoring,

we use a philosophical lens that we conceptualized ourselves, which we call *critical dialectical pluralism* (Onwuegbuzie & Frels, 2013a). Critical dialectical pluralism represents a social justice paradigm, the goal of which is to give voice and to empower the people who are being studied (Onwuegbuzie & Frels, 2013a). Thus, rather than viewing the literature review as only a phase in the research study, we should view the literature review as a methodology. We built our concept of methodology on the words stated by Onwuegbuzie, Leech, et al. (2011):

the literature review represents a methodology because it represents a broad approach to scientific research that encompasses a set of research objectives, research purposes, and research questions, as well as methods and procedures, criteria of quality, and standards for reporting. Each individual component of the literature review (e.g., selecting a topic, searching the literature, developing the argument, surveying the literature, critiquing the literature, and writing the review; see, for e.g., Machi & McEvoy, 2009) must be compatible for the process to be optimal. (p. 187)

## THE CLR META-FRAMEWORK

As you have seen in previous chapters, there are many ways that the literature review reveals itself throughout history and involves the use of one of the three research traditions (i.e., quantitative, qualitative, mixed). In this chapter, we have discussed ways that the literature review represents a data collection tool, a method, a mixed research study, and, most of all, a methodology. Further, because oftentimes a methodology can be an abstract process, a methodology needs some type of mechanism, or process, to bring it to fruition. This would be a framework. By now, you might be asking, then why a meta-framework? The prefix *meta* is used to mean *about (its own category)* and one example would be to say metadata are data about data. Definitely, there are many frameworks within the Seven-Step Model, such as steps within steps. Therefore, the CLR is a *meta-framework*. For example, in Step 1: Exploring Beliefs and Topics, we provide many parts of the belief system, such as worldview, field/discipline-specific

beliefs, and topic-specific beliefs. We imagine that if a person holds many beliefs on one issue, he/she might have a meta-belief system.

Returning to the metaphor of music genre as methodology, there are various frameworks for a symphony orchestra. The composer of the music itself uses a framework: perhaps a traditional three movement symphony, or four movement symphony, or a symphonic poem to convey the compositional ideas. Each section of the orchestra and each musician within the section uses a framework to interpret the composition, and the conductor has particular steps to begin and to end the concert of this music. As a result, the concert itself is a meta-framework of many steps, procedures, approaches, and ideas.

## INTRODUCING THE SEVEN-STEP MODEL

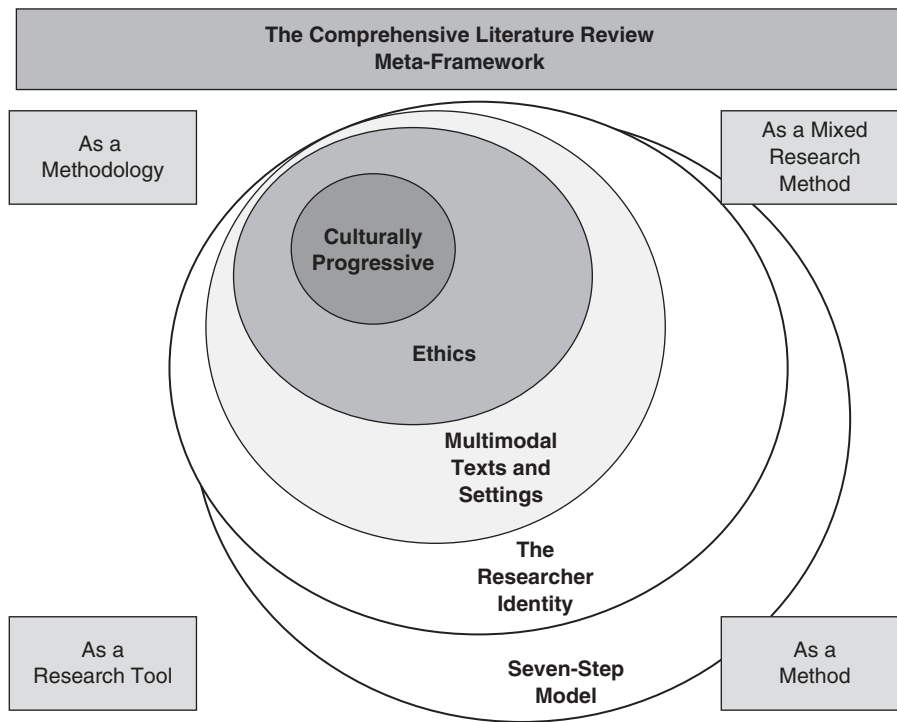
As we have discussed throughout this chapter, the literature review involves culture, ethics, multimodalities, and your identity as a researcher—inclusive of your values, beliefs, and experiences. As the phrase suggests, the Seven-Step Model of the CLR comprises seven steps: (a) Step 1: Exploring Beliefs and Topics; (b) Step 2: Initiating the Search; (c) Step 3: Storing and Organizing Information; (d) Step 4: Selecting/Deselecting Information; (e) Step 5: Expanding the Search to Include One or More MODES (Media, Observation(s), Documents, Expert(s), Secondary Data); (f) Step 6: Analyze and Synthesize Information; and (g) Step 7: Present the CLR Report. These seven steps are multidimensional, interactive, emergent, iterative, dynamic, holistic, and synergistic.

By *multidimensional*, we mean that each of the steps has multiple components or dimensions. By *interactive*, we mean that each step is dependent on all the other steps. That is, each step is related to each of the other steps by going back and forth at different stages of the review. By *emergent*, we mean that leads should be followed as they emerge, such as good detectives following all leads. For example, as we discussed earlier and will discuss in more detail in Chapter 8, whenever possible, as part of the literature review, prolific authors should be interviewed by the reviewer to find out about these authors' latest unpublished works, ongoing works, and/or future works (Step 5). The information that these authors provide

## TOOL: THE META-FRAMEWORK OF THE SEVEN STEPS

Figure 3.1 depicts what we have been discussing as a meta-framework of the concepts described in the first three chapters. As a literature reviewer, it is important that you understand the bigger picture because, as a culturally progressive researcher, it is an ethical responsibility to be able to justify each decision that you make and, moreover, to be able to convey your literature review to others, through your own lens, without changing the original intentions of the authors whose sources you synthesize.

As seen in Figure 3.1, the core of the meta-framework is the core of our Seven-Step Model, the cultural progressive approach that drives the literature review process. Layered within the model are the ethical approach, multimodal texts and settings, and the identity of the literature reviewer, as an original thinker, critical thinker, and reflexive literature reviewer.



**Figure 3.1** A conceptualization of a meta-framework and systems within systems

would be maximally emergent. By *iterative*, we mean that the steps are recursive. That is, any or even all of the steps can be repeated, as many times as is needed. Further, the reviewer often oscillates (i.e., moves back and forth) between some or all of these steps. For instance, the literature reviewer might receive

information from one or more prolific authors (i.e., Step 5) that might lead the reviewer to focus the search further (i.e., return to Step 2) or to select/deselect literature (i.e., return to Step 4). By *dynamic*, we mean that the CLR is vibrant, energetic, lively, and eventful—and, hence, exciting. By *holistic*, we mean that the

literature reviewer should incorporate as many semi-otic systems as possible. Finally, by *synergistic*, we mean that the CLR follows Hall and Howard's (2008) four core principles for synergistic approaches:

- synthesizing information obtained from as many of the five MODES as possible culminates in a literature review that is more comprehensive than would have been obtained if a traditional literature review has been conducted
- using a dialectic approach to conducting the literature review, wherein multiple philosophical assumptions and stances are intertwined, when applicable
- considering of equal importance quantitative and qualitative research techniques for conducting the literature review in general and synthesizing the information in particular

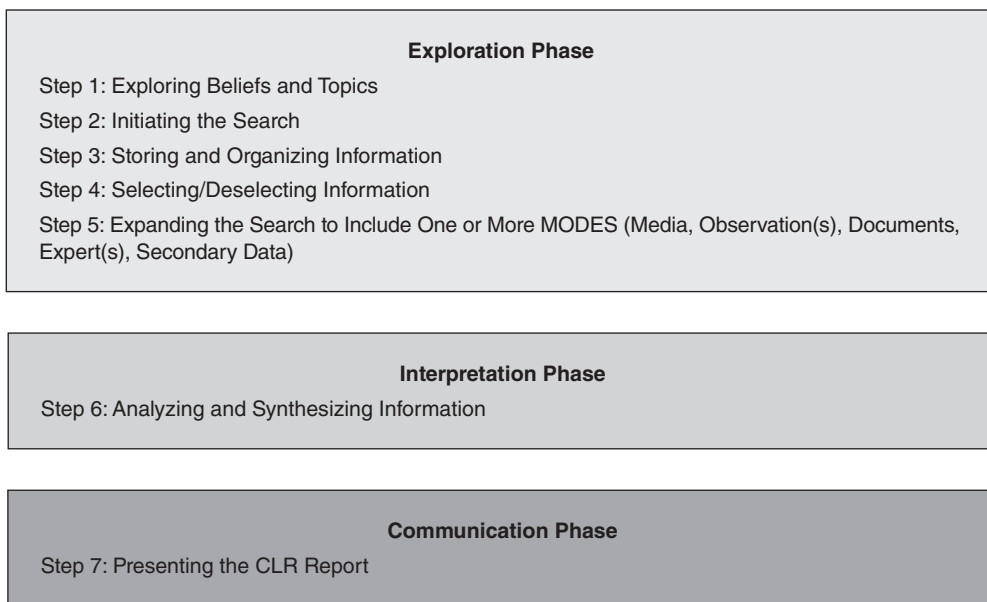
- balancing the multiple roles of the literature reviewer (i.e., culturally progressive, ethical, multi-modal, original thinker, critical thinker, reflexive researcher)

## EXPLORATION, INTERPRETATION, AND COMMUNICATION PHASES

The first phase, Exploration, involves a series of investigative steps. In particular, optimally, literature reviewers should explore an array of their belief systems, including their worldviews, research philosophical beliefs, discipline-specific beliefs, and topic-specific beliefs, as well as the inter-relationships among these belief systems (Step 1). In addition, literature reviewers should explore their topics of interest, using various means (e.g., personal beliefs, knowledge, and experiences;

### TOOL: THE THREE PHASES OF THE SEVEN-STEP MODEL

Figure 3.2 presents the seven steps of the CLR process subdivided into the following three phases: Exploration, Interpretation, and Communication.



**Figure 3.2** The three phases of the Comprehensive Literature Review

professional beliefs, knowledge, and experiences) to explore initial key terms associated with this topic to inform their information searches (Step 1). Further, literature reviewers should explore potential information databases, and then, once appropriate databases have been identified, they should search these databases to explore information about the topic and to identify the most appropriate key terms to help focus the search (Step 2). Literature reviewers also should explore what information to select and what information to deselect (Step 4) and expand the search by incorporating one or more of the five MODES (Step 5). While making their journeys to and through Step 5—the final step of the Exploration Phase—literature reviewers should explore how to store and to organize information.

The second phase, Interpretation, involves literature reviewers interpreting the selected information that they extracted via the previous five steps. This interpretation occurs through analysis and synthesis pathways. As the word suggests, this interpretation phase is interpretive because it is the culmination of the analysis, evaluation, and interpretation of selected information sources, which are then synthesized, leading to what Tashakkori and Teddlie (1998) refer to as *meta-inferences*, which represent inferences from each information source that are combined into a coherent narrative.

The third and final phase, Communication, involves literature reviewers disseminating their literature reviewer reports to the appropriate audience. This dissemination might take the form of a presentation that is delivered via Acting (e.g., performance ethnography wherein the literature review report is performed via dramatic representations such as plays), Visually (e.g., via drawings, paintings, photographs, videos, multimedia), Orally (e.g., presenting the literature review report in class; presenting the literature review report as part of a thesis/dissertation defense; presenting the literature review report at a research conference by itself, or as part of the presentation of a primary research report), or, most importantly, in Writing (e.g., via a class assignment, thesis/dissertation chapter, research article, book chapter, blog, website, or Internet-based social bookmarking service)—with the printed and/or digital form of the literature review report being stored somewhere (e.g., library, bibliographic database, website). Typically,

the goal here is to make the research report available to one or more others, thereby contributing to the cycle of knowledge generation.

## USING THE SEVEN-STEP MODEL TO INFORM PRIMARY RESEARCH

As seen in Figure 3.4, the Seven-Step Model can be applied to any or all of the 12 components of a primary research report: problem statement, background, theoretical/conceptual framework, research question(s), hypotheses, participants, instruments, procedure, analyses, interpretation of the findings, directions for future research, and implications for the field. The following sections provide an overview of these applications.

### PROBLEM STATEMENT

An effective (i.e., research-worthy) *problem statement* (also called the *statement of the problem*) is the description of a current and important challenge (i.e., problem) that is confronted by researchers and/or practitioners for which there are no adequate solutions available from the extant literature. Further, a research-worthy problem statement should make clear the nature and scope of the problem that has been identified. More specifically, the problem statement is a section in a research report that contains the topic for the study, the research problem within this topic, a justification for the problem based on past research and practice, deficiencies or shortcomings of past research or practical knowledge, and the importance of addressing the problem for diverse audiences (Creswell, 2002, p. 650). Clearly, to obtain “a justification for the problem based on past research” and to identify “deficiencies or shortcomings of past research,” a Comprehensive Literature Review is needed.

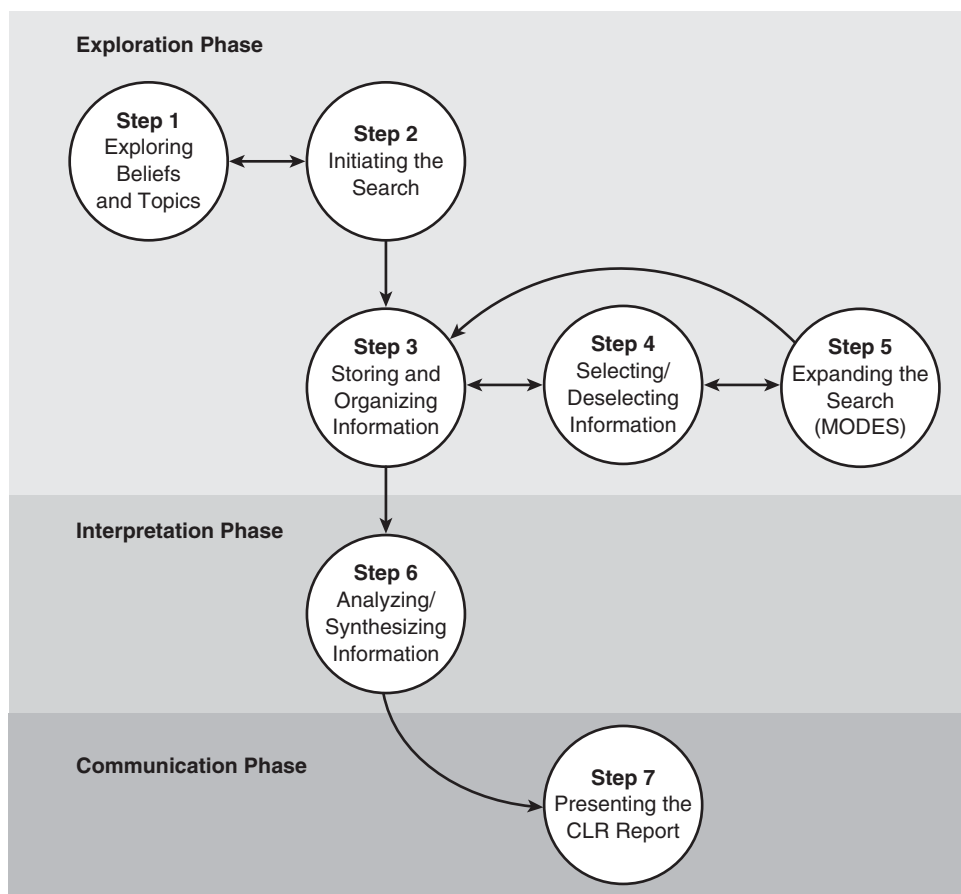
### BACKGROUND

It should be obvious that a literature reviewer needs to provide adequate background information to be able to write the literature review section of a primary research report. Thus, we do not need to provide a further explanation here as we hope it is implied!

## TOOL: OVERVIEW OF THE SEVEN-STEP MODEL

Figure 3.3 illustrates the flow of the Seven-Step Model. This figure also reflects the exploration, interpretation, and communication phases.

As you can see from this figure, Step 3 (Storing and Organizing Information) plays a pivotal role in the literature review process because every selected information source needs to be stored and organized, at least initially. Thus, as can be seen, arrows go from Step 2, Step 4, and Step 5 to Step 3, which indicates that information obtained during Step 2, Step 4, and Step 5 must be stored and organized. Also, arrows go from Step 3 to Step 4, Step 5 (i.e., via Step 4), and Step 6, which indicates that information obtained in previous stages should be stored and organized before moving to Step 4, Step 5, and Step 6. In the following chapters, you will learn about each of the seven steps to conduct the CLR.



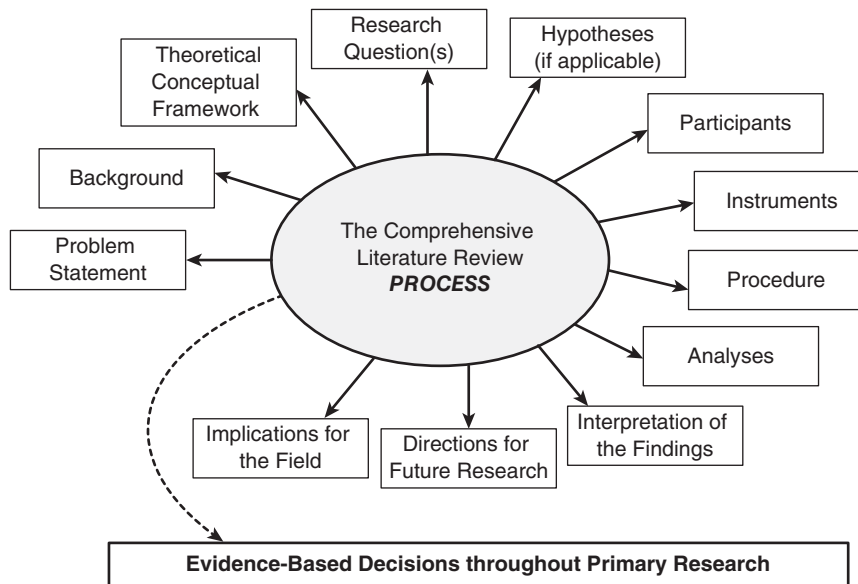
**Figure 3.3** The Seven-Step Model for a Comprehensive Literature Review

## APPLYING CONCEPTS

As we outlined in Chapter 1, before the literature review begins, the literature reviewer must determine whether the goal of the literature review is as an end in itself (i.e., as a stand-alone study) or as a study to inform primary research. If the goal is as an end in itself, then the Seven-Step Model will only be used to generate the literature review report (e.g., for written communication, for oral communication). However, if the goal of the literature review is to inform primary research, then the literature reviewer should undertake a series of literature reviews, as needed, throughout the conduct of the primary research.

## TOOL: SEVEN-STEP MODEL TO INFORM PRIMARY RESEARCH AREAS

Figure 3.4 presents how the Seven-Step Model might be used to inform the various components of the primary research study.



**Figure 3.4** The Comprehensive Literature Review process as it informs the various components of a primary research report

### THEORETICAL/CONCEPTUAL FRAMEWORK

As noted by Lester (2005), a *theoretical framework* guides the research process via the use of formal theory “developed by using an established, coherent explanation of certain sorts of phenomena and relationships”

(p. 458). In contrast, a *conceptual framework* is “an argument that the concepts chosen for investigation, and any anticipated relationships among them, will be appropriate and useful given the research problem under investigation” (p. 460). Virtually all quantitative, qualitative, and mixed research studies are driven, at

least to some degree, by a theoretical framework and/or a conceptual framework. In order to identify an “established, coherent explanation of certain sorts of phenomena and relationships” (i.e., theoretical framework) or to determine whether the “concepts chosen for investigation, and any anticipated relationships among them, will be appropriate and useful” (i.e., conceptual framework), the literature reviewer must be familiar with the extant body of information.

## RESEARCH QUESTION(S)

A **research question** is an interrogative statement that the researcher attempts to answer using research techniques. In most instances, research questions stem from the literature because they represent a narrowing of the purpose statement, which, in turn, reflects a gap in our knowledge base. Even if the research question stems from practical experience, it is always a good idea to examine the literature not only to contextualize the research question, but also to check to determine whether this research question has not already been addressed by one or more other teams of researchers. Thus, a literature review helps a researcher finalize his/her research question(s).

## HYPOTHESES

The research **hypothesis** is a proposed explanation of an observable phenomenon that can be tested via research. Alternatively stated, a hypothesis is a declarative statement wherein the researcher—typically in quantitative research studies or the quantitative phase(s) of mixed research studies—makes a prediction or judgment about the relationship that exists among the variables of interest. As stated by Johnson and Christensen (2010), “the stated hypothesis typically emerges from the literature review or from theory” (p. 77). Thus, a literature reviewer needs to conduct a literature review to be able to finalize his/her hypotheses.

## PARTICIPANTS

In the **participants section** of a research report, at a minimum, authors describe the sample/population size, sampling scheme (how the sample was selected), and characteristics of the sample/population members. It is always a good idea to examine the literature to contextualize all the sampling decisions made. For example,

in quantitative research, wherein hypotheses are tested, the appropriateness of the sample size needed for determining whether these relationships exist (i.e., what is called *statistical power*) depends, in part, on the size of the relationship expected among the variables that underlie the hypothesis (i.e., known as the *effect size*). Information regarding the expected size of the relationship among the variables of interest can be gleaned from the size of the relationships among the same or similar variables that has been documented in previous empirical reports. Consequently, the literature review can play an important role in helping the literature reviewer make sound decisions regarding his/her choice of participants.

## INSTRUMENTS

In a research study, **instruments** are tools used for facilitating the fulfillment of one or more of the following research objectives: explore, describe, explain, predict, influence (see Figure 1.4 in Chapter 1). For example, in quantitative research, where the primary research objectives are to describe, to explain, to predict, or to influence data, instruments are used to measure, to observe, or to document data. In qualitative research, where the primary research objectives are to explore or to describe, instruments are used to document or to examine phenomena. In mixed research, instruments can be used for any of the reasons for which they are used in both quantitative and qualitative research. The literature review plays a vital role in helping the literature reviewer select the most appropriate instrument(s) for a primary research study. Unfortunately, in our experience, we have noticed that many researchers—especially beginning researchers—do not thoroughly investigate the instruments that they have selected.

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## EXAMPLE: USING THE CLR TO SELECT AN INSTRUMENT

Gibson and Dembo (1984) contended that their Teacher Efficacy Scale (TES) was developed based on Bandura’s (1977) theory of self-efficacy. However, Dellinger (2005) demonstrated that this assertion had been contradicted repeatedly in the literature. Further, Dellinger (2005) documented that numerous researchers had empirically demonstrated that

the TES has poor psychometric properties (e.g., Coladarsi & Fink, 1995; Guskey & Passaro, 1994; Henson, 2002, 2003; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Witcher et al., 2006) and, thus, subsequently questioned the dimensionality of the TES. In particular, they concluded that the TES had more than the two subscales that were claimed by its developers. Yet, despite the poor measurement validity associated with the TES, as well as its inadequate foundational validity (i.e., reflecting “researchers’ prior understanding of a construct and/or phenomenon under study”; Dellinger & Leech, 2007, p. 323) and historical validity (i.e., reflecting the “type of validity evidence that accrues through utilization and cited relevance in the extant literature”; Dellinger, 2005, p. 44), many researchers still use the TES. In fact, at the time of writing, Proquest Dissertations and Theses (PQDT) databases revealed 666 dissertations wherein this scale was used either to collect efficacy data (the overwhelming majority of articles) or to assess/discuss the psychometric properties of the TES, which is consistent with Henson, Kogan, and Vache-Haase’s (2001) declaration that the TES is “the most frequently used instrument in the area” (p. 404)—despite its questionable psychometric properties, which might invalidate any findings stemming from the use of this instrument. The documented problems with the TES instrument provide just one example of how not conducting the literature review can lead to an inappropriate choice of instrument by the researcher.

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## PROCEDURE

The *procedure section* is “the section of the research report that describes how the study will be executed” (Johnson & Christensen, 2010, p. 592). This section also includes a delineation of the research design, which, as we defined in the previous chapter, is the framework (e.g., outline or plan) that is used to address the research question(s). As is the case for the participants and instrument sections, a literature review can play an important role in helping the literature reviewer make sound procedural decisions.

## ANALYSES

In the context of research, an *analysis* involves breaking the underlying data into smaller parts to gain a better understanding of the phenomenon represented by these data. In addition to examining methodological sources to determine appropriate ways to analyze the data, given the research question(s) and/or hypotheses, the literature reviewer should examine reports that are similar to the primary study to ascertain the analyses that were

conducted, as well as any problems experienced by the analysts. For example, for quantitative research studies, it would be useful to find out how different researchers dealt with missing data during their analyses (i.e., information that was not obtained from one or more participants). In qualitative research, it might be useful to find out what analytical techniques led to data saturation (e.g., the analysis led to the emergence of themes or categories such that the analyst concludes that new data will not provide any new information or insights for developing these themes or categories; Morse, 1995). Thus, the literature review can play an important role in helping the literature reviewer make sound analytical decisions.

## INTERPRETATIONS OF THE FINDINGS

As we discussed in the previous chapter, when debunking Myth 3, researchers are unable to contextualize their findings without incorporating relevant information from the extant body of works. Therefore, researchers include a section to discuss the *implications of the findings*. Even more importantly, when serendipitous (i.e., unexpected) findings emerge, it is even more important to use the extant body of works to help explain these findings. For instance, in the previous chapter, we described how Onwuegbuzie et al. (2003) conducted a literature review during the interpretation phase of their study, which led to them identifying a phenomenon that they labeled a *Matthew effect* to describe the performance of cooperative learning groups in introductory-level education research methodology courses. Therefore, the literature review during the interpretation phase helps to rule in or rule out rival explanations.

## DIRECTIONS FOR FUTURE RESEARCH

It should be obvious that a literature reviewer needs to conduct a literature review to provide useful *directions for future research* that does not lead to unnecessary, redundant research being conducted in the future. As such, we do not need to provide a further explanation here but will keep this feature as our final thoughts on the subject.

## IMPLICATIONS FOR THE FIELD

In interpreting their findings, it is essential that the literature reviewer does not provide recommendations

that have been demonstrated previously as being inappropriate. Thus, the literature reviewer needs to conduct a review to help make thoughtful and ethical recommendations that are culturally progressive. The *implications for the field* section of a research report allows the literature reviewer to include ideas for the future research on this topic.

## THE SEVEN-STEP MODEL AS A CYCLICAL PROCESS

As we have discussed, the Seven-Step Model can be used to inform at least 12 components of a primary research report. For primary studies, the Seven-Step Model should serve as a cyclical process, wherein the literature reviewer undergoes the seven steps as many times as is needed to inform adequately all components of a research report. This does not mean that the Seven-Step Model needs to be applied on at least 12 occasions. In fact, it is possible that several, if not most, of these components can be informed within the same seven-step cycle by carefully coding each information source. We will show you how to accomplish this in Step 3 of the Seven-Step Model (i.e., Chapter 6).

Remembering that although here we discuss the literature review as informing many parts of a primary research study, the literature review also can stand alone and, in this case, it is also a cyclical process. In fact, in writing this book on the literature review, we conducted our own information research to inform our report as a stand-alone literature review. We considered the research problem, which was the misrepresentation of the literature review in the social sciences. Next, we knew that simply describing the literature review through time would not add to the knowledge base; yet, we determined that we needed to synthesize this information toward a new definition. Thus, the CLR was born!

## CONCLUSIONS

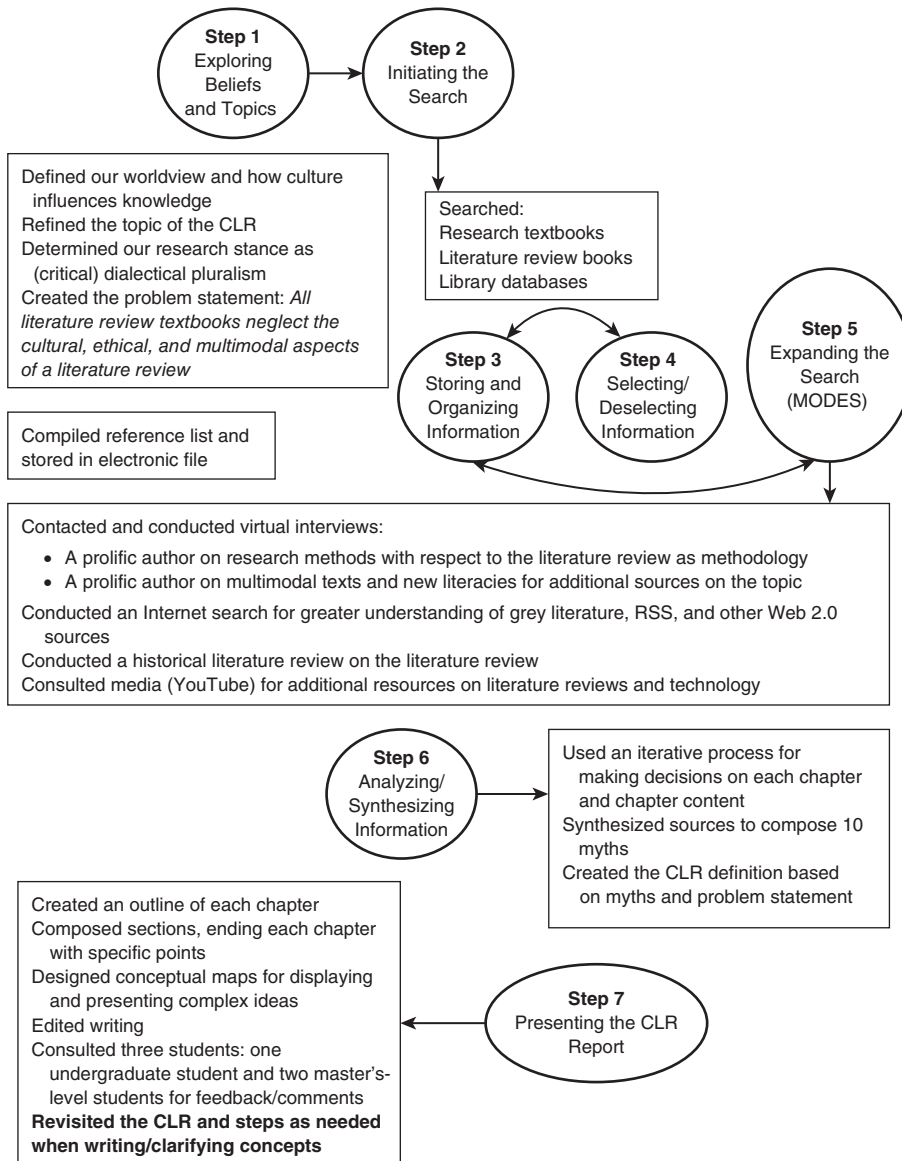
In closing, it is important to remember that as a literature reviewer, you should be aware of your identity as a culturally competent and ethical researcher, and that your comprehensive literature review might become someone else's basis for future research or for establishing a

best practice in your field. Indeed, a literature review is a methodology. Therefore, as a methodology, method, and more, the literature review holds an important place in “the literature,” and can impact stakeholders in your field or discipline. Now that we have discussed many ways to consider research tradition and tied these ideas to the literature review in Chapters 1 and 2, it is time to embark on your all-important literature review journey. In the next chapter, you will begin Step 1 and explore your worldview and research philosophical beliefs, topic-based beliefs, and discipline-based beliefs. In addition, in Step 1, we begin to guide you in documenting your step through the reflective practice, or what we call the CORE product. We suggest that you review these important chapter concepts before moving on:

- The literature review represents a data collection tool, a method, a mixed research method, and, above all, a methodology.
- When the literature review serves as an end in itself (i.e., stand-alone), then the literature review represents a single research study that ends when the literature review process ends.
- When the goal of the literature review is to inform primary research, then the literature review represents an embedded study.
- The CLR is facilitated by using mixed research techniques—that is, by collecting and analyzing *both* quantitative and qualitative information within the same literature review.
- The literature review can be framed as an intrinsic case study (i.e., the literature review is designed to select sources of information that highlight particular cases of interest [e.g., illustrative case, deviant case]).
- The literature review also can be an instrumental case study (i.e., the literature review is designed to examine a particular case for the main purpose of providing insight into a phenomenon or issue, or to obtain a generalization).
- The literature review can be a collective/multiple case study too (i.e., the literature review is designed to examine multiple cases in an attempt to examine a phenomenon).
- A methodology is a broad approach to scientific inquiry that contains a system or set of practices, methods, rules, and principles within a given field. These assumptions apply to the CLR.

## TOOL: EXAMPLE OF USING THE SEVEN STEPS

Figure 3.5 represents a synopsis of our own literature review for designing the Seven-Step Model. As seen in this figure and in Step 7, we revisited the steps as needed when writing the final report, which is our textbook.



**Figure 3.5** A description of our literature review as a cyclical process for presenting the Seven-Step Model and chapters of this textbook

## CHAPTER 3 EVALUATION CHECKLIST

### CORE

### Guiding Questions and Tasks

<i>Critical Examination</i>	Think of one specific piece of knowledge, perhaps a historical fact or concept. Why do you think culture influences the way this knowledge was communicated?
<i>Organization</i>	Consider your experience reading research studies. Are particular sections of the report more interesting to you than others? Could it be that new jargon is an obstacle for you? Collect some resources to help you in the reading of the more difficult sections.
<i>Reflections</i>	In what ways is it important to consider the CLR as a methodology? In what ways might methodological variations of research influence the way it is conducted?
<i>Evaluation</i>	Discuss a time that you gathered both qualitative and quantitative data to understand a new topic, such as a medical procedure or at what restaurant to eat. How did one tradition add meaning to your understanding of the other?