Writing Integrative Literature Reviews: Using the Past and Present to Explore the Future

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Abstract

This article presents the integrative review of literature as a distinctive form of research that uses existing literature to create new knowledge. As an expansion and update of a previously published article on this topic, it reviews the growing body of literature on how to write literature reviews. The article identifies the main components of the integrative literature review, provides examples of visual representations for use in literature reviews, and describes how to write literature reviews that are integrative, definitive, and provocative. The article concludes by discussing the role of the integrative literature review in assessing future directions for policy and practice and in catalyzing further research.

Keywords

literature reviews, integrative literature reviews, reviews of the literature

The integrative literature review is a distinctive form of research that generates new knowledge about the topic reviewed. It reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated. Integrative literature reviews are conducted on dynamic topics that experience rapid growth in the literature and that have not benefited from a comprehensive review and update during an extended period. They are also used to review new emerging topics that generate a growing body of literature that may include contradictions or a discrepancy between the literature and observations about the issue, which are not addressed in the literature. Thus, integrative literature

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reviews provide review and critique to resolve inconsistencies in the literature and provide fresh, new perspectives on the topic.

This article offers guidelines for writing integrative literature reviews and cites examples of exemplary literature reviews. After reviewing the purposes best served by literature reviews, the article addresses how to organize and write an integrative literature review. Examples of published integrative literature reviews are provided that illustrate how this type of research has made substantive contributions to new knowledge.

Literature reviews are conducted for different purposes and take different forms for various audiences. Cooper's (1988) taxonomy of literature reviews categorizes literature reviews by their focus, goals, perspective, coverage, organization, and audience. Although most literature reviews focus on the research findings of the literature reviewed, some combine this with a focus on the research methods and theories used in the literature, whereas others focus on practices, programs, or interventions in the literature. The goals of the literature review, another characteristic in Cooper's taxonomy, often include both critically analyzing the literature and integrating diverse and sometimes conflicting perspectives from the literature. Another goal is identifying central issues or methodological problems in existing literature. The perspective characteristic of Cooper's taxonomy addresses whether the author has taken a neutral perspective on how the literature is reviewed and discussed, or the author espouses a position or point of view that may influence the review and discussion of the literature.

The next characteristic, coverage, identifies the degree to which the literature reviewed is comprehensive in its coverage of the existing body of literature on the topic. Coverage of the literature ranges from exhaustive, to exhaustive with selective citation (i.e., the entire literature is examined, but only selected pieces of literature are discussed in detail), to representative, to central or pivotal (i.e., only literature that is influential, highly original, controversial, or provocative is reviewed). The taxonomic category of organization concerns how the review is arranged. According to Cooper, literature reviews can be organized in three ways: (a) conceptually, such that literature addressing the same ideas is reviewed together; (b) historically, according to the chronological order in which issues appeared in the literature; or (c) methodologically, in which literature using the same research methods are reviewed together. Finally, the intended audience of the literature review can be categorized as scholars (general scholars or those specific to a discipline or specialization), practitioners or policy makers, or the general public. As the intended audience of the review shifts from specialized scholars to the general public, scholarly argumentation and technical terms give way to practical illustrations and lay language.

Next, the existing literature on how to write literature reviews is examined. This section reviews and critiques existing literature on writing literature reviews. Then, the main body of the article is organized into three sections: (a) preliminary considerations for writing the literature review, (b) methods for writing integrative literature review, and (c) writing a review that is integrative, definitive, and provocative.

A Review of the Literature on Literature Reviews

Since the author's first article on this topic appeared (Torraco, 2005), the body of literature addressing how to write literature reviews has grown from a few publications to a large body of literature including 31 publications cited in this article. In addition to the growth in quantity, the quality and scope of this literature has increased during the past decade. This literature is reviewed next to present the current state of knowledge on the topic and to identify the strengths and deficiencies of this literature.

The search for literature on literature reviews began by listing as many keywords as possible using terms such as "literature review," "integrative literature review," "research review," "review of the literature," and so on. Three databases were searched (ERIC, Academic Search Premier, and Google Scholar). A simple matrix was developed to track which keywords and databases led to relevant literature and which did not. The names of the databases used to search the literature were listed along the horizontal axis at the top of the matrix, and the keywords from the list made at the start of the search were listed alphabetically along the vertical axis of the matrix. Then, the thesauruses of the three databases were examined to ascertain whether or not they use any of the keywords to locate literature. The databases used three keywords for this literature—"literature review," literature reviews," and "state of the art reviews." Literature on writing literature reviews was selected for review only if it met all the following criteria:

- Books and refereed scholarly journal articles were selected for review that focused on writing literature reviews. Articles in non-refereed journals and lay publications were excluded from the review.
- Publications, books and journal articles, on writing literature reviews published in the last 30 years (since 1986) were selected for review. This includes some of the first publications on writing literature reviews including those written prior to the author's first article on this topic (Torraco, 2005).
- Publications meeting the criteria above were selected for review regardless of the academic discipline for which they were written. Publications on writing literature reviews in eight disciplines are included in this section.
- Publications on writing literature reviews were selected for review regardless of the primary type of publication for which the literature review is written (i.e., publications for writing literature review articles, dissertation literature reviews, literature review for books).

Thirty-one publications on writing literature reviews, six books and 25 journal articles, were identified using these keywords and criteria. Each piece of literature was examined using a staged review (i.e., abstracts, then main body of each literature source). Next, the findings from the literature on writing literature reviews are discussed.

The literature on writing literature reviews can be divided into those that address how to write literature reviews in general, and those that address writing literature

reviews in specific disciplines or for specific purposes. Comprehensive treatment of the process of writing literature reviews includes books by Fink (2014), Galvan (2013), Hart (1998), and Pan (2013). Discipline-specific publications include those for writing reviews of the literature in medicine (Green, Johnson, & Adams, 2006; Nightingale, 2009; Oxman, 1994; Rosenfeld, 1996), psychology (Baumeister & Leary, 1997; Bem, 1995; Galvan, 2013), biology (Pautasso, 2013), education (Badger, Nursten, Williams, & Woodward, 2000), information systems (Bandara, Miskon, & Fielt, 2011; Webster & Watson, 2002), human resource development (HRD) (Callahan, 2010), management (Rowley & Slack, 2004; Seuring & Gold, 2012), and the social sciences (Hart, 1998). Several publications examine writing the dissertation literature review (Boote & Beile, 2005; Kucan, 2011; Randolph, 2009; Zaporozhetz, 1987). Some illustrate a particular pedagogical approach to preparing writers of literature reviews (Gordon & Stewart, 2002; Granello, 2001; Kellsey, 2005; Kucan, 2011; Zorn & Campbell, 2006). A few articles distinguish literature reviews from other types of conceptual and theoretical work (Callahan, 2010; Rocco & Plakhotnik, 2009). Some publications are devoted to doing a literature search for the review (Hart, 2001). Literature in all these categories is briefly reviewed next.

Pautasso's (2013) article is organized into 10 steps for writing a literature review. Pautasso includes commonly used steps for writing a literature review (i.e., define the topic, search the literature, and critically analyze the literature), and provides helpful guidance such as examining literature references to identify additional potentially relevant publications. Pautasso also presents a conceptual diagram of the need for different types of literature reviews depending on the amount of material published on the topic. Baumeister and Leary (1997) compared writing literature reviews with writing empirical manuscripts. According to the authors, all literature reviews are expected to make substantial contributions to theory building, whereas the purpose of most empirical studies is to test or confirm existing theories. They described common mistakes made by authors of literature reviews, which include inadequate introduction and theoretical framing of the review, insufficient coverage of the literature on the topic reviewed, lack of integration of ideas on the topic, lack of critical analysis of the literature, failure to distinguish between assertion and evidence, too narrow a selection of literature, focusing on the researchers rather than the research, stopping at the present (i.e., neglecting to provide implications for future research), and failure to align conclusions with review findings.

To coincide with the launching of a new journal in information systems for theory and review articles, Webster and Watson (2002) developed guidelines on how to write literature reviews to help prospective authors and encourage submissions. Their guidelines covered how to introduce the review and motivate the reader to read it, determining the scope of the review, identifying relevant literature, structuring the review, developing a model to guide future research, and providing conclusions and implications from the review for researchers and practitioners. Webster and Watson also provided helpful guidance on narrative tone (constructive and developmental, rather than critical). Three authors also in the field of information systems described the use of NVIVO 8.0 for conducting literature reviews in this discipline (Bandara et al., 2011).

Baker (2000) challenged authors to decide why doing a literature review is better than doing primary or original research on the topic. He argued that the reader of the review should be convinced by the author: (a) that a review of the literature on the topic is important and necessary for the advancement of knowledge on the topic and (b) that the author is qualified for this by virtue of her or his expertise on the topic and skill in writing literature reviews.

Because the dissertation literature review is expected to provide a comprehensive and integrative perspective on the topic of a doctoral dissertation, published work on dissertation literature reviews contributes valuable insights on writing integrative literature reviews. In addition to their convincing argument that being able to effectively write a dissertation literature review is central to the preparation of education scholars, Boote and Beile (2005) discussed ways to evaluate the quality of a dissertation literature review using 12 criteria in five categories: coverage, synthesis, methodology, significance, and rhetoric. All 12 of Boote and Beile's quality criteria for dissertation literature reviews also apply to integrative literature reviews as stand-alone publications. Similarly, Randolph (2009) described guidelines for the quality of dissertation literature reviews and provided a self-evaluation tool for writers of dissertation literature reviews.

Several articles illustrate a particular pedagogical approach to preparing writers of literature reviews. Kucan (2011) described a doctoral seminar created to develop students' skills for writing the literature review for dissertations. Zorn and Campbell (2006) demonstrated an instructional method for teaching students how to write literature reviews, with emphasis on how to synthesize ideas from numerous sources into an integrated contribution to new knowledge on the topic. Granello (2001) described the use of Bloom's taxonomy of educational objectives to develop graduate students' ability to demonstrate higher levels of cognitive complexity when writing literature reviews. Guidelines for the systematic review and critique of research literature are provided by Badger et al. (2000), Gordon and Stewart (2002), and Nightingale (2009).

Comparing the literature on writing literature reviews examined a decade ago by Torraco (2005) with what was reviewed for this article, the literature available today on writing literature reviews is more diverse and detailed than in the past. Analysis of this body of literature identified five distinct goals of literature reviews, discussed in a subsequent section of this article, "Goals and Purposes of Review Articles." Guidance for writing literature reviews is now available for many disciplines and addresses dissertation literature reviews as well as instructional methods for preparing authors to write literature reviews. Most of the 31 publications on writing literature reviews reviewed in this article provide detailed discussions of each phase of the writing process, often with examples and illustrations. However, whereas some publications discussed how to critically analyze the literature examined in the review (Boote & Beile, 2005; Hart, 1998), most cover critical analysis of the literature in a cursory way by listing only what the critique should accomplish (i.e., identify research gaps, weaknesses in the literature, and methodological problems) without describing how to critically analyze the literature as a prerequisite to synthesis of the literature. The important role of critical analysis in literature reviews is presented later in the article.

Another shortcoming of this literature is the lack of emphasis on synthesis in literature reviews. Synthesis is a creative process that integrates existing ideas with new ideas to develop new perspectives on the topic. Most publications on literature reviews do not even mention synthesis, whereas others refer to synthesis as a product of literature reviews without discussing its importance and how it is done. Without using the term *synthesis*, Baumeister and Leary (1997) cited the need for literature reviews to integrate ideas by showing how literature fits into broad theories and patterns. Overall, the lack of emphasis on synthesis in literature reviews is a weakness in most existing literature on the topic. A discussion about how to synthesize new knowledge on the topic of the review is considered in further detail later.

Finally, the literature on writing literature reviews pays scant attention to exploring the future of the topic of the review. The depth and scope of a literature review is expanded when it probes the future of a topic or field. However, aside from encouraging authors to discuss implications for further research, little attention is given in this literature to probing the future of practice and policy in a field or topic. There is no better opportunity to assess pending developments in a field and identify factors that are shaping the future of an issue than when analyzing and critiquing recent, relevant literature on the topic (Webster & Watson, 2002). A discussion of this role of the literature review is also presented later in this article.

Writing an integrative review of the literature is covered next in three sections: (a) Preliminary Considerations for Writing the Literature Review, (b) Methods for Writing Integrative Literature Review, and (c) Writing a Review That Is Integrative, Definitive, and Provocative.

Preliminary Considerations for Writing the Literature Review

Most integrative literature reviews address two general kinds of topics—mature topics or new, emerging topics. This is because social and behavioral science topics vary along an age continuum from old to new. Because features of a literature review differ depending on the maturity of the topic reviewed, the distinctions between literature reviews of mature and new topics are discussed next.

As a topic matures and its knowledge base develops and expands, there is corresponding growth in the size of its body of literature. Because the knowledge base of a mature topic is larger and more diversified, an integrative literature review of mature topics is expected to capture the dynamics and development of new knowledge on the topic by reviewing and critiquing the literature and then synthesizing knowledge in its current state through a reconceptualization of the topic. Several examples of literature reviews of mature topics exist in the HRD literature. Martin, Kolomitri, and Lam (2014) conducted a review of the literature on training methods in 13 categories, compared the training methods on seven criteria (i.e., learning modality, training environment, trainer presence, proximity, interaction level, cost considerations, and time demands), and discussed indications for when to use each method. Other integrative

literature reviews of well-developed topics in HRD include reviews of the literature on teams and team attributes (Wildman et al., 2012), leadership (Carasco-Saul, Kim, & Kim, 2015; Rose, Shuck, Twyford, & Bergman, 2015), mentoring (D'Abate, Eddy, & Tannenbaum, 2003), and organization development (Weick & Quinn, 1999). Each of these literature reviews resulted in fresh, new understandings and, in most cases, significant reconceptualizations of the mature topics reviewed.

A second kind of integrative literature review addresses new or emerging topics that would benefit from a holistic conceptualization and synthesis of the literature. Because these topics are relatively new and have not yet undergone a comprehensive review of the literature, the review is more likely to lead to an initial or preliminary conceptualization of the topic (i.e., a new model or framework) rather than a reconceptualization of existing models. New or emerging topics in a field are popular among authors and researchers and, hence, can quickly generate an expanded body of literature that may not have benefitted from a comprehensive and critical review. Such a topic in HRD is data-driven strategies to measure employee productivity and schedule hourly employees that are increasingly common in today's digital, networked work environments. An increasingly prevalent form of workplace productivity measurement is the use of data analytics to measure individual employee performance on a continuous basis, a technology used by Amazon and other employers (Kantor & Streitfeld, 2015). Buckingham and Goodall (2015) described the development of a reliable, data-driven employee performance measurement system that provides frequent "performance snapshots" of individual employees. In another example of data-driven human resource practices, retailers and other employers increasingly use sophisticated software that uses predictions of customer volume and sales during specified time periods to prescribe staffing levels to meet customer demand at the lowest labor cost. Lambert (2008) examined the way these technology-enabled scheduling practices are used to protect employers from retail market variability at the expense of hourly employees by shifting the burden of fluctuations in sales to workers rather than assuming this as a management responsibility. As literature on new scheduling practices, performance measurement, and related developments continues to accumulate, the topic of data-driven human resource practices, as an emerging issue in the field, will become a desirable topic for integrative literature reviews.

Kornelakis's (2014) integrative literature review on flexicurity provides a timely contribution to our knowledge of this recent phenomenon. Based on a careful examination of the concept of flexicurity, the balance between individual employment security and the organization's need for flexibility, the author reconciles the frequent tension in employer–employee relationships and argues that labor policy and workplace practices on employment security and flexibility can be mutually enhancing. Accounting for European and U.S. perspectives, Kornelakis advocates an agenda for research and practice on "organizational Flexicurity," which HRD scholars and practitioners are well positioned to pursue.

Whether the literature review addresses a mature or emerging topic, readers expect to see the knowledge from the literature synthesized into a model or conceptual framework that offers a new perspective on the topic (Torraco, 2005). This expectation is

consistent with Whetten's (1989) observation that "the mission of a theory-development journal is to challenge and extend existing knowledge, not simply to rewrite it" (p. 491).

Establishing the Need for the Literature Review

At the beginning of the literature review, authors should justify why a literature review is the research method of choice to address the problem. The absence of a literature review on a dynamic topic during an extended period can justify the need for an integrative literature review. The need for the review can be supported by discussing the importance of the topic for the field, which may motivate readers who may not share the intensity of your interest in the topic to read the review.

It is important to establish why a literature review is a better research methodology to study the problem than other forms of research.

> An omission or deficiency in existing literature on an issue is often suggested by a discrepancy between the literature and observations about the issue which are not addressed in the literature. In this case the omission or deficiency is confirmed in the literature review section of a larger empirical study of the issue. Thus, a new study that examines the problem specifically rather than a literature review alone may be the best approach. (Torraco, 2005, p. 358)

Included in eight criteria for evaluating a theoretical contribution, Patterson (1986) characterized "importance" as being "applicable to more than a limited, restricted situation" and "having relevance to life or to real behavior" (p. xx). This corresponds to journal editor Bem's (1995) warning that authors who wish to publish review articles in *Psychological Bulletin* should avoid narrowly conceived topics as the basis for writing review articles. Justifying the significance and need for the literature review, as opposed to another research method, is as important for literature reviews as it is for other forms of scholarly writing.

Goals and Purposes of Review Articles

Five distinct goals or purposes of literature reviews were identified from the review of the literature addressing literature reviews reported earlier in the article. Literature reviews can be written to (a) review, update, and critique the literature; (b) conduct meta-analysis of the literature; (c) review, critique, and synthesize the literature; (d) reconceptualize the topic reviewed in the literature; and (e) answer specific research questions about the topic reviewed in the literature. Each purpose of literature reviews is briefly discussed next.

Review, update, and critique the literature. Literature reviews are expected to enhance knowledge on the topic beyond what is contained in the original literature sources. Most literature reviews accomplish this by providing some form of critique of how

well the topic is presented in existing literature. Critical analysis of the literature identifies its strengths and weaknesses as well as any deficiencies or contradictions among literature sources.

Meta-analysis. Meta-analysis offers both a means and a purpose for reviewing the literature on a topic. It is a distinctive method of reviewing the literature that uses statistical procedures to summarize a body of separate but similar empirical studies to reveal patterns of causal relationships across a body of research on a given topic (Hunter & Schmidt, 1990).

Review, critique, and synthesize the literature. A third purpose of literature reviews is to review and synthesize literature on a topic. Synthesis is a creative act that results in the generation of new knowledge about the topic reviewed in the literature. Synthesis can take different forms. (Five alternative forms for presenting synthesis are identified later in the article.) Authors synthesize new knowledge by weaving together ideas from the literature into a unique synthesis model.

Reconceptualization of the topic. Synthesis may not reconceptualize the topic reviewed in the literature. For example, although a research agenda (a form of synthesis) poses provocative questions or propositions that give direction for future research on the topic, the research agenda itself may not reconceptualize the topic. In this case, reconceptualization can be another purpose of literature reviews. Reconceptualization provides a new way of thinking about the topic reviewed in the literature. Reconceptualization is undertaken when the current conception of the topic is acknowledged as out of date or otherwise problematic and critique and reconceptualization of the topic is needed.

Answer specific research questions about the topic. The fifth purpose of literature reviews is the use of literature reviews to answer specific research questions about a topic. A literature review that takes this approach focuses the review on addressing the issues that are stated in the research questions for the review. These research questions define the boundaries of the literature to be reviewed and the issues to be examined. An example of a literature review conducted to answer specific research question was done by Kyndt and Baert (2013) who sought to identify the antecedents of employees' work-related learning intentions and participation in learning as studied in prior research. The authors stated the purpose of their literature review as "It aims at providing an exhaustive summary of the literature relevant for the research questions at hand" (p. 278).

   Because these five purposes of literature reviews differ, authors should explain the purpose of the review at the beginning of their work, along with their perspective on the literature review (neutral representation of the literature vs. taking a point of view on how the topic is reviewed).

   As part of establishing the need for the literature review, the scope and boundaries of the review are specified to show the bodies of literature that will be reviewed, and

those that will not. Although a careful description of the topic addressed by the review is needed to establish the boundaries of the review, if the topic is delineated by a certain context (e.g., types of organizations, occupations, or populations) or period of time (e.g., developments in the last 5 years, indefinite time period), these dimensions of the topic also should be included in the boundaries of the review. Defining the topic of the review alone is often insufficient to establish the boundaries of the review. For example, the topic of a literature review might be the history and prevalence of working poor families in the United States. However, the scope and boundaries of the literature review depend on how "family" is defined, how "working families" is defined (i.e., does it include part-time work?), how "poor" or low income is defined, and the chronological beginning and end of what is meant by "history and prevalence." Because the review is also bounded by the assumptions of the author, these should be stated as they apply to epistemology (what counts as knowledge), axiology (values as they apply to writing a review), and if applicable, ontology (the nature of being and existence) (Ruona & Roth, 2000).

Methods for Writing Integrative Literature Reviews

Specifying the topic and purpose of the integrative literature review leads the way to organizing and writing the review around a coherent structure for presenting the review and its findings. Because there is no standardized format for literature reviews as there are for sections of reports of empirical studies, authors of literature reviews do not have the benefit of following a well-established format to organize their articles. Referring to the format of literature reviews, the *Publication Manual of the American Psychological Association* (American Psychological Association, 2010) states that "The components of literature reviews can be arranged in various ways (e.g., by grouping research based on the similarity in the concepts or theories of interest, methodological similarities among the studies reviewed, or the historical development of the field" (p. 10). Nonetheless, the author of a literature review begins by selecting a topic in need of review and a general understanding of what is known, and not known, about the topic.

Organization and Structure

Poorly organized writing of any kind does not get published and disseminated. Authors of integrative literature reviews can provide organization and structure to the review in two ways. First, as with other scholarly writing, the author should organize the review manuscript for logical flow of ideas, organization, and readability. Traditional empirical research articles typically are organized with sections for an introduction, review of research and theory, methods, results, discussion, and conclusions. Although the structure of literature reviews may be more flexible than with other types of research, readers expect that the literature review, as a form of research, will begin with an introduction to the topic and a justification of the need for the review and conclude with a recapitulation of the review findings and implications for further research. The review

also should be organized to fit the body of literature on the topic. For example, if the topic of the review is obesity and strategies for reducing obesity, the review could be organized and sequenced to present literature on the nature and prevalence of obesity in the population, and then literature on the effectiveness of various strategies for reducing obesity.

The second type of structure for the literature review is the conceptual structuring of the topic of the review. Conceptual structuring of the topic provides the literature review with coherence and clarity about what is being reviewed and how the main concepts of the topic come together as a unified idea. The conceptual structure of the topic adopted by the author is central to how the literature review is organized. Consequently, writing early stages of the article without a clear, conceptual structuring of the topic creates difficulties later. "As the review article takes shape, subsequent alteration of the conceptual structure of the topic requires repeated modifications to the rest of the article which become increasingly difficult as more of the article is written" (Torraco, 2005, p. 359). Three forms of structure for the review can be used: temporal structure, methodological structure, and conceptual or thematic structure.

Temporal structure. Temporal or historical structure organizes the review according to the temporal or historical development of the topic and the chronological development of the literature on the topic. More appropriate for mature topics, reviews with temporal or historical structure present literature according to a timeline of the origins and development of the topic and how this is represented in the literature. An example of a literature review organized by temporal structure is a review of the literature on training methods in HRD, a mature topic with a large body of literature. Literature on training methods in HRD would be reviewed according to a historical timeline of the development of formal training methods in the post-World War era when dominant forms of training were classroom and on-the-job, followed by more structured forms of training (i.e., instructional systems development [ISD]), computer-based training, the expansion of training methods beyond structured classroom methods (e.g., coaching, mentoring, networking, self-directed learning, and experiential learning), to more recent training through elaborate e-learning systems.

Methodological structure. Literature reviews using this form of structure arrange and review pieces of literature together according to methodological similarities among the literature sources reviewed. Methodological structure can be used for literature reviews of topics that have been studied using two or more research methodologies. Literature is reviewed and critiqued in sections of the review manuscript for the types of qualitative and quantitative research methodologies used in the pieces of literature examined by the review. An example of a literature review organized by methodological structure is a review of the literature on evaluation in organizations. Having been studied for several decades, evaluation is a well-developed topic that appears in literature using both qualitative and quantitative research methodologies (Russ-Eft & Preskill, 2001). A literature review organized by methodological structure would be sequenced by first reviewing literature grouped by one methodological approach (e.g.,

qualitative studies of evaluation) and then reviewing literature grouped by another methodological approach (e.g., quantitative studies of evaluation).

Conceptual or thematic structure. Conceptual structure is organized around the main concepts of the review topic. Most topics in the social sciences are composed of several key concepts. The main concepts of the topic provide a framework around which the review can be organized. A review of theory and research literature on work design provides an example of how the main concepts of the topic of work design provide a coherent conceptual structuring of a literature review on this topic. The review of theory and research literature on work design would likely include seminal models of work design such as sociotechnical systems (Cherns, 1987; Emery & Trist, 1969), quality improvement (Deming, 1986), the job characteristics model (Hackman & Oldham, 1980), and other foundational work on this topic. The conceptual structure of the review of this literature is organized around the main concepts of work design, which, because they are dominant constructs, are represented in some way in all the literature on this topic. For example, a key concept in work design literature is employee involvement. Employee involvement in work decisions and job changes is associated with enhanced work motivation and job satisfaction, and with greater work productivity (Lawler, Mohrman, & Ledford, 1998). Employee involvement, then, is a concept for structuring the literature review on work design, along with other major work design concepts such as worker–work system balance, feedback, and multi-directional communication. The review of theory and research literature on work design would be organized around sub-headings for each of these concepts. If a concept map is used in the review of this topic, these concepts would appear as dominant nodes on the map around which related ideas would be linked.

Similarly, a thematic structure can also be used for organizing a literature review. The themes for thematic structuring are broad issues that encompass streams of related ideas in the literature. The themes used for structuring the review often transcend the time periods covered by the literature. A review of theory and research literature on organization structure and organizations as systems provides an example of how themes provide structure for a literature review of this topic. The review of theory and research literature on organization structure and organizations as systems would likely include seminal work such as system dynamics modeling (Sterman, 2001), organization as systems (Galbraith & Lawler, 1993; Rummler & Brache, 1995), and systems theory (Gradous, 1989). Similar to conceptual structure, themes in this literature are apparent because they are reflected in some way in all the literature on this topic. Examples of themes for structuring a review on organization structure would be the need for balance between internal and external environments, the value of systems thinking, nonlinearity in organization design, and other dominant themes in this literature. Again, providing conceptual or thematic structuring of the topic provides the literature review with coherence and clarity about what is being reviewed and how the main concepts or themes of the topic come together as a unified idea.

Authors should consider using a diagram to illustrate the structure of the review. Providing a visual representation of how the review is structured strengthens the connections among the sections of the review and enhances the reader's understanding of how the topic is addressed in the literature. Visual representations such as concept maps (Carmot, 2006), chronological timelines (Green et al., 2006), relationship maps or diagrams (Pautasso, 2013), and other figures provide useful adjuncts to illustrate how the review is organized. Figure 1 provides three examples of visual representations for integrative literature reviews. Figure 1 shows a chronological timeline that illustrates the structure of a review of the literature on training methods, a concept map that illustrates the structure of a review of the literature on job satisfaction, and a relationship map that illustrates the structure of a review of the literature on integrated strategic change.

Finally, note that both types of structure for the literature review—the organization and layout of the review manuscript and the temporal, methodological, or conceptual/ thematic structure of the review—need to be consistent with each other. The organization and structure of the review manuscript (i.e., its form) should allow it to build toward a synthesis of ideas that offers refreshing, new perspectives on the topic and catalyzes further research (i.e., its function). In short, the organization of the review should support and leverage its findings and contributions to new knowledge on the topic.

Discussion of Research Methods

Although an integrative literature review can be organized in various ways, the author is still expected to follow accepted conventions for reporting how the study was conducted. This relates to the methodology—how the literature was identified, analyzed, synthesized, and reported by the author. First, procedures for selecting the literature to be included in the study should be described. Learning about the literature and how it was obtained, including the keywords and databases used, is of particular interest to readers who may wonder whether the literature they are familiar with was examined. Authors should insure that recently published literature and older literature are both systematically searched. In addition, they should not overlook the value of reviewing the references listed in scholarly publications; authors can often find additional relevant literature by examining references in the literature already obtained.

The nature and scope of the topic of the literature review determines which databases will yield the literature desired for the review. The title of Fink's (2014) book, *Conducting Research Literature Reviews: From the Internet to Paper*, suggests the importance of the Internet and online bibliographic or article databases for comprehensive literature searches. Yet, despite the convenience and breadth of coverage afforded by using the Internet for literature searches, Hart (2001) warned that "as anyone can publish whatever they like on a web page, many pages are irrelevant and do not meet any agreed standard" (p. 128). Hart's (2001) book devotes separate chapters to doing a literature search for books and bibliographies, journal articles, government publications, statistics, archives, and for newspapers, editorials, diaries,
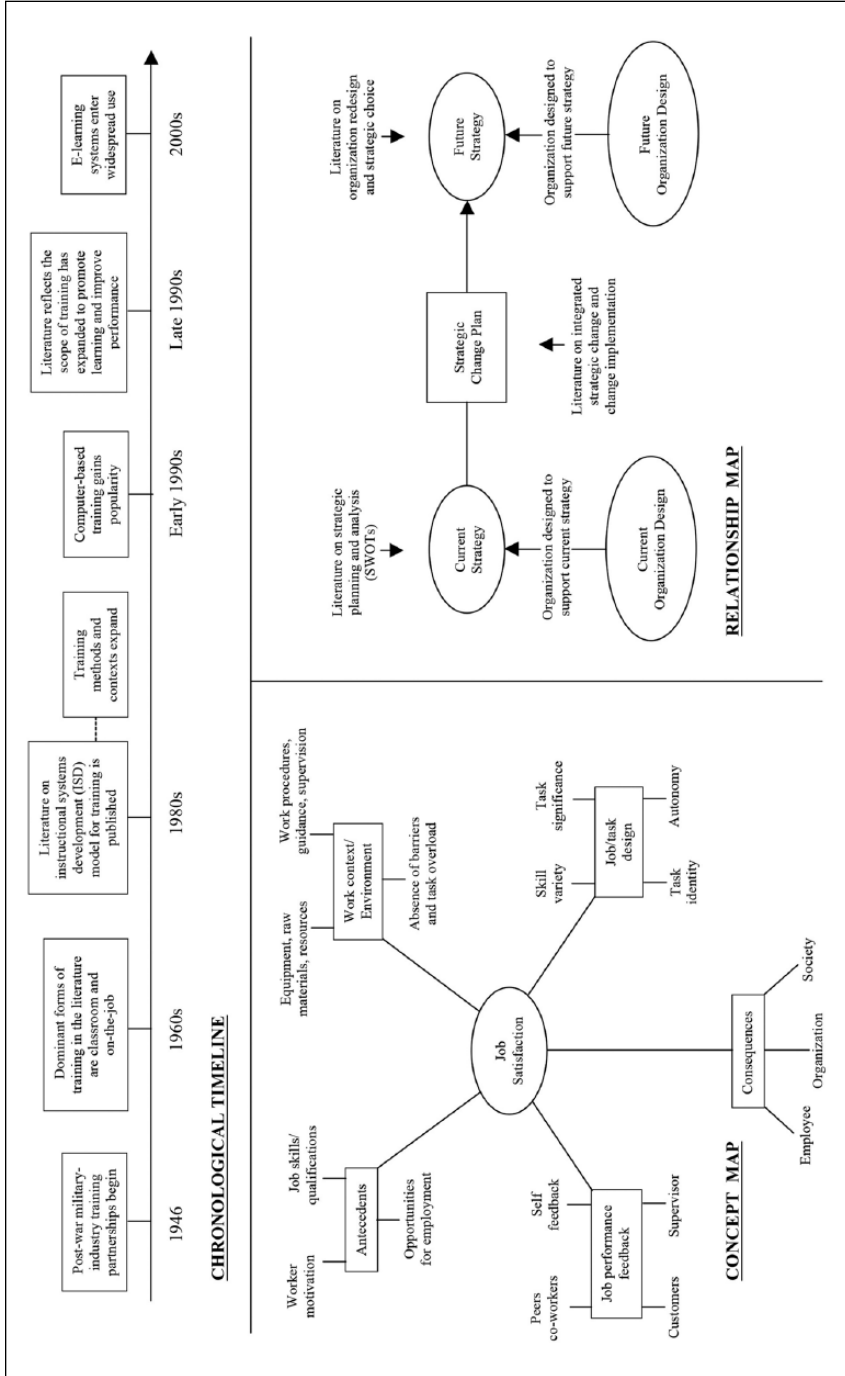
Figure 1. Examples of visual representations for integrative literature reviews.
Note. ISD = instructional systems development; SWOTs = strengths, weaknesses, opportunities, threats.

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and personal writing. A careful, comprehensive literature search is vital to the quality of the review because the literature constitutes the "data" for this type of research.

Authors are encouraged to develop a simple matrix to keep track of which keywords and databases lead to relevant literature and which do not. To do so, list the names of the databases used to search the literature along the horizontal axis at the top of the matrix, and list the key subject terms along the vertical axis at the side of the matrix. Prior to constructing the matrix, list all the potential key subject terms you can identify, and that might be listed in the thesauruses of the databases searched. These become the key subject terms that are listed alphabetically along the vertical axis of the matrix. This helps determine which key subject terms to look for when first searching a database. Once you have ascertained whether or not a database uses a key subject term to locate literature, enter either "yes" or "no" in the cell at the intersection of the key subject term and database. The cells of a fully populated literature search matrix tell you where to search for available literature and provide documentation to use when reporting how the literature search was conducted in the methods section of the literature review. Authors should consider displaying this matrix in a table or appendix in the review article. Because the author likely will be doing work on the same topic at a later date, the matrix of keywords and databases will serve as a quick reference rather than trying to recall this information months or years later.

The criteria used for retaining or discarding the literature yielded by the literature search should be stated. These criteria should be consistent with the purpose and goals of the review. If the review addresses a mature topic on which much has been written, the criteria for selecting literature should be broad enough to capture the breadth of relevant literature and have sufficient time parameters to access work from early publications to the present. Selection criteria may include the topic's population of interest (i.e., working age adults only), the age of the literature (i.e., work published within the past 5 years), the research methods used (i.e., limited to ethnographies), the education level of the topic (i.e., postsecondary education only), and whether non-scholarly literature is included in the review such as technical and research reports by independent research centers, private foundations, non-profit organizations, and federal agencies.

> Various aspects of the literature can be reviewed with more or less scrutiny by the author depending on the purpose and topic of the review. Authors may do a complete reading of each piece of literature, analyze methods and findings only, or conduct a staged review of the literature (i.e., an initial review of abstracts, then an in-depth review). (Torraco, 2005, p. 361)

The author should discuss how the main ideas and themes from the literature were identified and categorized. Steps taken to verify the validity or authenticity of key themes that emerged from the analysis should be described, especially for literature reviews of new topics or phenomena for which accepted models and frameworks do not yet exist. Because the literature was selected using specific search criteria, some

convergence is expected in the main ideas across the literature reviewed, which helps categorizing themes that appear in the literature. Each theme used should be defined carefully in writing and distinguished from other themes used to analyze the literature (Hart, 1998). Because literature analysis frequently exposes concepts and ideas from a literature source that appear important but do not fit neatly in an established theme, the thematic categories require revision (Randolph, 2009). Each theme should have conceptual clarity and integrity without being too narrowly defined. The description of methods for searching, analyzing, and interpreting the literature should be made as transparent as possible to the reader. The methodology should be written in sufficient detail so that if other researchers attempted to replicate the literature review, adequate information would be available to do so. As with other types of research, readers of an integrative literature review expect to see how the literature review process was used to develop and present the synthesis and findings of the study. The reader should be able to see how the synthesis and findings of the study were developed from the literature and be able to trace findings back through the review methods to the original literature sources.

Writing a Review That Is Integrative, Definitive, and Provocative

Well-written literature reviews can be seminal touchstones in the development of a topic. Researchers in many fields observe the convention of citing literature sources only since the most recent integrative literature review on the topic was written. Writing a literature review that is integrative, definitive, and provocative is the result of the author combining several elements in the review: critical analysis of existing literature, synthesis of new knowledge about the topic, discussion of the conceptual reasoning used to integrate the concepts and ideas found in the literature, the implications of the review for further research on the topic, and what the review suggests about future directions for the topic. When these elements are combined, "the review 'tells a story' by critically analyzing the literature and arriving at specific conclusions about it" (Torraco, 2005, p. 361). Each of these elements of noteworthy literature reviews is discussed next.

Critical Analysis

Critical analysis of literature involves carefully examining the main ideas and arguments presented in the literature through a critical lens. Critique is the critical evaluation of how well the literature represents the topic. Critical analysis involves deconstructing pieces of literature on the topic into their basic elements. These may include literature segments on the origins of the topic, its social or environmental context, the main ideas or concepts of the topic, and sections devoted to recent research findings and applications to practice. Careful analysis sometimes exposes knowledge that is taken for granted or obscured by years of intervening research. This enables the

author to conceptually reconstruct the topic for a clearer, more complete, and up-to-date conception of the topic.

This lays the foundation for critique, the product of critical analysis. Critique identifies the strengths of the literature as well as any deficiencies, omissions, inaccuracies, and other problematic aspects of the literature. The critique should identify aspects of the topic that are missing, incomplete, or poorly represented in the literature, as well as inconsistencies or contradictions among publications on the topic. Critique also identifies areas in which new knowledge is needed in light of recent developments on the topic, including inconsistencies in the relationship of research to practice on the topic. Thus, by identifying the strengths and deficiencies in existing literature, critical analysis is a necessary step toward improving the knowledge base.

Concept maps or analysis matrices provide visual representations of the main ideas and conceptual relationships of a topic and enhance the reader's understanding of the author's critical analysis of the literature. Webster and Watson (2002) illustrated the use of a concept matrix that listed the key concepts of the topic along one axis of the matrix and the articles in which they were addressed along the other axis. Entries in the cells of the matrix show more frequently used concepts and their sources in the literature. Carmot (2006) used two case studies to describe the use of concept maps to organize data for large-scale literature reviews and technical reports. Salipante, Notz, and Bigelow (1982) discussed the use of concept matrices in literature reviews of research in organization behavior. Pan (2013) provided guidelines and examples for building tables to summarize literature. Because they reinforce the author's findings and enhance the reader's understanding, concept maps or other visual representations should be used in literature reviews whenever possible.

Synthesis

Critical analysis enables the literature review to build on the strengths and limitations of the literature to create a better understanding of the topic through synthesis. Synthesis is a creative activity. Synthesis integrates existing ideas with new ideas to create a new formulation of the topic. The ability to synthesize depends on the author's deep understanding of the topic and its literature. Using the insights acquired from a careful and critical analysis of the literature, the author recasts, combines, reorganizes, and integrates concepts and perspectives on the topic to create new theoretical formulations and ways of thinking about the topic.

> Synthesizing the literature means that the review weaves the streams of research together to focus on core issues rather than merely reporting previous literature. Synthesis is not a data dump. It is a creative process that generates a new model, conceptual framework, or other unique conception informed by the author's intimate knowledge of the topic. (Torraco, 2005, p. 362)

Table 1. Five Forms of Synthesis for Integrative Literature Reviews.

A research agenda that flows logically from the critical analysis of the literature. The research agenda should pose provocative questions (or propositions) that give direction for future research.

A taxonomy or other conceptual classification of constructs is often developed as a means to classify previous research. They, in turn, lay the foundation for new theorizing (Doty & Glick, 1994).

Alternative models or conceptual frameworks—New ways of thinking about the topic addressed by the integrative review. Alternative models or conceptions proposed by the author should be derived directly from the critical analysis and synthesis provided.

Meta-analysis—Summary of a collection of comparable research studies generated through statistical analysis of analytic results from individual studies to arrive at a combined average effect size for the purpose of integrating research findings.

Metatheory—The integration and synthesis of a literature review can provide the basis for developing metatheory across theoretical domains through future research.

Synthesis of the new knowledge generated from the literature review can be presented in several ways. Common forms of synthesis include a research agenda, a taxonomy (Doty & Glick, 1994), an alternative model or conceptual framework, meta-analysis (Hunter & Schmidt, 1990), and metatheory. Meta-analysis examines the statistical effects of comparable empirical studies for a combined average effect size for the purpose of integrating research findings (Cooper, Hedges, & Valentine, 2009). A metatheory explains or elaborates on a body of theory (Ritzer, 1992). Synthesis of a body of literature can provide the basis for developing metatheory across theoretical domains. For example, Wilson (1998) developed a metatheory of knowledge, and systems theory has been used as a metatheory for HRD (Gradous, 1989). Two other forms of synthesis, a new conceptual model and a research agenda, are commonly used together to synthesize the literature in review articles. The review and critique of existing literature culminates in a new model or framework for the topic that, because it posits new relationships and perspectives on the topic, yield new questions or an agenda for further research. (See Table 1 for a summary of these five forms of synthesis.)

The synthesis need not be cast as the new, definitive reformulation of the topic. Rather, as Pan (2013) observed, synthesis "might consist of speculation on how the pieces of evidence found in the literature fit together along with some tentative conclusions and a discussion of their implications" (p. 2). Nonetheless, the result of a comprehensive synthesis of literature is that new knowledge or perspective is created despite the fact that the review summarizes previous research.

In summary, critical analysis and synthesis work together as the means through which literature (the data) is used to generate knowledge about a topic. Critical analysis of previous research identifies areas in which new knowledge is needed; synthesis builds on this by creating new models and ways of thinking about the topic.

Logic and Conceptual Reasoning

In theoretical research, data analysis is replaced by logic and clear conceptual reasoning as the basis for arguments and explanations (Whetten, 1989). Clear logic or conceptual reasoning is the most important feature of the explanation of a model, conceptual framework, or theory. Similar to the description of how the literature review as a whole was conducted, the author should describe how the form of synthesis presented in the review was created by discussing how the ideas, concepts, and interrelationships presented in the literature were reformulated and integrated to produce the synthesis (Torraco, 2005). Explaining one's logic or reasoning is always part of the justification of a concept or model because it represents "the theoretical glue that welds the model together" (Whetten, 1989, p. 491). As with other types of research, readers of a literature review expect to see how the logic and conceptual reasoning of the research process was used to develop the proposed framework or model.

> Presenting a framework or model without a description of the origin of its constructs, their interrelationships, and the conceptual reasoning used to build it is akin to presenting the results and conclusions of an empirical study without discussing data collection and analysis. (Torraco, 2005, p. 363)

The author should also explain how the framework or model helps to overcome the omissions, deficiencies, or other problems identified in the literature. The author's conceptual reasoning allows the reader to follow the connections among the research problem (e.g., deficiencies in the literature), the critique of the literature, and the theoretical outcome (e.g., a new conceptual model).

The Integrative Literature Review as a Catalyst for Further Research

A strong integrative review of the literature can play an important role in stimulating further research on the topic. When the literature review reconceptualizes an issue, the conceptual model inevitably presents new relationships and perspectives that have not been fully explored. In addition, other deficiencies or unresolved issues will have surfaced in the author's critique of the literature. When the literature is inconclusive or conflicted on some aspect of the topic, it is important to observe that existing literature does not allow for definitive conclusions in this area (Slavin, 1986). These needs for additional research on the topic should be made explicit by formulating questions for further research or a research agenda.

The Role of the Literature Review to Explore Future Policy and Practice

The value of the literature review is enhanced when it probes the future of a topic or field. In addition to identifying areas for further research, integrative literature reviews

provide a means to probe the future practice of a topic. Hart (1998) and Boote and Beile (2005) included the practical significance of an issue as a criterion in their frameworks for assessing the quality of literature reviews. Beyond this, however, there is little emphasis on the role of the literature review to discuss the practical significance or future directions of a field.

Topics addressed by literature reviews undergo constant and often dramatic change, leading to new developments of interest to scholars, policy makers, and practitioners. These developments are explored by studying behavior, events, and causes of change in the topic in an attempt to better understand what is stable and what will likely change (Morgan, 2003). There is no better opportunity to identify factors that are shaping the future of an issue than when reviewing relevant literature on the issue (Webster & Watson, 2002). Moreover, the appeal of the literature review to researchers and policy makers is enhanced when it addresses pending developments and explores future directions for the field—developments which researchers and policy makers seek to influence with their own work. For example, the review by Valentine et al. (2009) of student transitions into postsecondary education critiques alternative models and identifies factors expected to both enable and hinder successful postsecondary transitions in the future. In short, integrative literature reviews that do not emphasize the implications for future practice, policy, and development of the topic miss a valuable opportunity to engage others in shaping the future. A checklist for writing an integrative literature review that summarizes these guidelines is provided in Table 2.

Recommendations

The guidelines summarized in the table above can help authors to write integrative literature reviews that offer valuable contributions to research, stimulate new thinking about a topic, and catalyze further research. In addition, attention to writing style and tone will enhance the quality of the author's work. Clarity of writing is at the same level of importance as accuracy in scholarly writing. Integrative literature review articles should be written simply and directly. Lengthy discussions should be avoided. Authors of integrative literature reviews are encouraged to follow Struck and White's (1979) famous dictum, "omit needless word."

Because integrative literature reviews require critical analysis of literature written by others, authors should be conscious of the tone of their writing (Torraco, 2005). Avoid being overly critical of existing research and making personal aspersions. Critique the literature, not the author. Deficiencies in a body of literature will be evident to the reader if they are clearly and accurately reported. Authors are encouraged to convey a constructive and developmental tone to readers, many of whom are authors themselves.

This article describes how to organize and write an integrative literature review. The guidelines and examples provided are intended to help authors write and publish fresh, new literature-based perspectives on topics important to the field.

Table 2. A Checklist for Writing an Integrative Literature Review.

A. Before Writing an Integrative Literature Review

   1. What will the integrative literature review address (i.e., review of a new topic? a mature topic?). Is the topic of the review clearly defined? Are the scope and boundaries of the review demarcated to show the bodies of literature that will and will not be reviewed?

   2. Is there a *need* for the integrative literature review? Is an integrative literature review the most appropriate form of research to address the problem? Will the review article make a significant, value-added contribution to new thinking in the field?

   3. Is the perspective taken by the author on the literature review explained to readers (e.g., neutral representation vs. taking a position or point of view)? Are the assumptions of the author regarding the literature review stated?

B. Organizing an Integrative Literature Review

   4. Is the integrative literature review organized effectively?

       (a) Is the literature review organized for logical flow of ideas, organization, and readability?

       (b) Is the literature review organized around a coherent structure for clarity about what is being reviewed and how the main concepts or themes of the topic come together as a unified idea (e.g., temporal, methodological, or conceptual structure)?

       (c) Should diagrams or other visual representations be used to show how the literature review is structured and to enhance the reader's understanding of how the topic is addressed in the literature?

   5. Are the methods for conducting the integrative literature review sufficiently described?

       (a) How was the literature for the review selected? What key subject terms (or keywords) were used to search the literature? What databases were used to search the literature?

       (b) Is a table or matrix used to track which keywords and databases led to relevant literature and which did not? If so, is the use of the table mentioned in the review for readers?

       (c) Are the criteria stated for retaining or discarding the literature retrieved?

       (d) Is there a discussion of how each piece of literature was reviewed (e.g., complete reading of each literature source, reading of abstracts only, a staged review)?

       (e) Is there a discussion of how the main ideas and themes from the literature were identified and analyzed?

       (f) Is the description of the methods for searching, analyzing, and interpreting the literature as transparent as possible for the reader? Is the description of the literature review methodology written so that if other researchers attempted to replicate the integrative literature review, sufficient information would be available to do so?

C. Writing an Integrative Literature Review

   6. Does the review critically analyze existing literature on the topic (i.e., is a critique provided)?

       (a) Does the critical analysis describe both the strengths and weaknesses of the literature?

       (b) Does the critical analysis identify literature deficiencies, omissions, inaccuracies, conflicting perspectives and inconsistencies, and aspects of the topic or phenomenon that are missing, incomplete, or poorly represented in the literature?

(continued)

Table 2. (continued)

(c)	Would it be beneficial for the review to include a concept map, analysis matrix, or other visual representation of the main ideas and conceptual relationships of a topic to enhance the reader's understanding of the critical analysis of the literature?

7. Does the integrative literature review synthesize knowledge from the literature into a significant, value-added contribution to new knowledge on the topic? (See Table 1 for five forms of synthesis.)
8. Does the integrative literature review lay the foundation for future research by formulating questions for further research on the topic?
9. Does the integrative literature review describe the logic and conceptual reasoning used by the author to synthesize the model or framework from the review and critique of the literature?
10. Does the integrative literature review explore the future of the topic or field? Does the review identify factors that are shaping the future of the topic, discuss pending developments in the field, and assess the direction for future events and trends?
11. Has the integrative literature review been examined and revised for clear, concise, understandable writing?

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