

Exploring How to Make Literature Reviews Easier

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Many researchers find the literature review portion of conducting research challenging, especially analyzing the information from the literature. Despite the availability of software tools, this article demonstrates that current processes are widely varied and archaic. The processes used are revealed through interviews with current faculty. Faculty members identified numerous challenges and issues with analyzing the qualitative data for literature reviews. The ensuing discussion examines potential improvements which could be achieved through using NVivo as an example of qualitative software that could be used to make literature reviews easier to coordinate. Recommendations for improving the efficiency of literature reviews are included.

Keywords: literature reviews, reviews of the literature, scholarship, faculty, qualitative analysis

INTRODUCTION

The literature review or review of existing literature is integral to any study. Completing the review grounds the subject matter, contributes to the justification of the study at hand, and provides the readers with the necessary context to understand the study and its implications (Boote & Beile, 2005). However, the crafting of the literature review can be a frustrating, time-consuming, and tedious process. Interestingly, while numerous books, handbooks and articles recommend various methods for improving the data-gathering process, very little work has been done to better understand how scholars approach synthesizing and organizing the discovered data.

The goal of this study is to better understand how scholars manage their narrative literature reviews post-information gathering and posit if the use of a potential software solution can substantially enhance the literature review process. To that end, business faculty were interviewed to ascertain how they learned to conduct narrative literature reviews and the processes they followed to literature review completion. Approaches, tools and challenges were specifically explored. This article will then shift focus slightly and examine the use of available tools and how they can potentially make literature review writing easier and more effective. The authors will briefly describe one specific approach for crafting literature reviews using NVivo, a tool qualitative researchers use to organize and code textual data. Based on this analysis and subsequent discussion, strategies can be developed to help business scholars more easily and thoroughly conduct literature reviews.

LITERATURE REVIEW

Overview

Scholarly studies and educational texts aimed at helping students and scholars craft better narrative literature reviews exist. Still, these works focus on locating relevant sources rather than analyzing the texts, synthesizing the information or organizing the review. However, some work has been done in categorizing different types of literature reviews, approaching the literature review as a qualitative analysis of textual data, and using software tools to facilitate the writing process. These three topics will be briefly described here.

Types of Literature Reviews

Numerous articles have categorized and described different literature reviews including those that venture a typology (Grant & Booth, 2009; Paré, Trudel, Jaana, & Kitsiou, 2015). However, unless the scholar is specifically conducting a stand-alone review and that review is the thrust of the study, most will utilize what is commonly referred to as a “narrative review” to provide background and context for their studies. Narrative reviews differ significantly from structured reviews, such as systemic reviews or meta-analyses. While the criteria and strategy for conducting a more structured review is explicitly detailed in the body of the text, scholars crafting narrative reviews will often not explain why certain information sources and search terms were used. Instead, these reviews can be viewed as “opportunistic” (Paré, Trudel, Jaana, & Kitsiou, 2015) in that scholars will often cobble these literature reviews together from easily accessible information sources. As a result, the reviews vary in quality greatly.

The Literature Review as a Qualitative Analysis

One approach to synthesizing and organizing the information found during a literature review search is to approach the found textual data as a qualitative research study (Onwuegbuzie & Frels, 2014; Onwuegbuzie, Leech, & Collins, 2012). Qualitative analysis involves reading, analyzing and synthesizing texts and other data to ascertain themes and patterns. Similarly, the writing of a literature review requires the same skills set. The only difference is the nature of the texts themselves. While qualitative raw data might consist of interview transcripts, questionnaires and/or journal entries, the literature review generally consists of secondary sources, such as journal articles, conference proceedings and books. Nonetheless, both types of data are texts and can be analyzed as such (Onwuegbuzie & Frels, 2014; Onwuegbuzie, Leech, & Collins, 2012). Therefore, techniques and tools that are used for qualitative analysis can also be useful for making literature reviews easier and more thorough.

Tools and Technologies

Numerous resources exist to assist scholars with locating and organizing texts to be used for a literature review, such as subscription databases (EBSCO, JSTOR), search engines (Google Scholar), search alerts, social media platforms (ResearchGate) and citation management tools (RefWorks, EndNote). However, few tools exist that assist with analyzing the texts or organization of the review. In all of the current strategies, scholars must continuously scan the information to synthesize and fit the information into a form that is usable for the literature review. However, the use of qualitative software tools can streamline this process.

One of the computer-related tools most discussed in articles, NVivo, is a software product intended to assist qualitative researchers with the coding, analysis, and organization of their data that can be easily extrapolated to the creation of literature reviews. Crafting a literature review is very similar to how NVivo is used. Many sources can be easily imported into and manipulated within NVivo in order to assist with data analysis and theme generation. The literature review process is significantly enhanced by the software’s features, which include total document searching, contextual linking from description codes to the original sources and the ability to conduct queries on the data. Studies have effectively described qualitative tools and provided instructions on how to use them with literature reviews (Bandara, 2006;

Bandara, Furtmuller, Gorbacheva, Miskon, & Beekhuyzen, 2015; Bandara, Miskon, & Fielt, 2011, Di Gregorio, 2000).

However, many academics do not use computer-related tools. The question is why these tools, which enable the researcher to more easily organize and search sources, are not more widely used by business scholars. To better understand the barriers that keep business scholars from taking advantage of processes and tools which would make the literature review easier, interviews were conducted with business professors at a small university who have conducted at least one literature review in the preceding calendar year.

METHODOLOGY

Now, not enough is known about how scholars analyze the data they have collected for a literature review. To better understand the analytical approaches, in-depth interviews were conducted with 17 professors in the School of Business at a Pennsylvania university with about 5,000 students. The interviews were designed to explore how literature reviews are completed focusing on what occurs once sources have been located. Exploratory research was used to help understand the processes used and how respondents felt about their approaches which is an appropriate research approach for these research objectives. Twelve 30 minute or 6 one-hour interviews are presented as a good rule of thumb for how many interviews to conduct for exploratory research (Rowley, 2012). Hennink et al. (2017) found that code saturations were reached after 9 interviews (2017). In this study, 17 30-minute interviews were conducted, which is more than adequate to explore the topics addressed.

FINDINGS

Sample Description

The sample consisted of a good variety of respondents. The 17 respondents provided a good representation of length of service and rank at the university, as illustrated in Table 1 below, and academic areas as shown in Table 2. Several business areas were represented.

**TABLE 1
LENGTH AND TIME AT UNIVERSITY**

Years	Frequency
1-5	4
6-10	4
11-15	3
16-20	3
21+	3
Total	17

**TABLE 2
ACADEMIC AREAS**

Area	Frequency
Accounting/Taxation	3
Finance	1
Management	6
Marketing	3
Sport Management	3
Other	1

When asked how many literature reviews respondents worked on, typically, respondents worked on one, sometimes two, literature reviews at a time in a given year, usually working on it alone. Most reported working on one article at a time and even if collaborating with others, they would tend to work on the literature review by themselves. When working with co-authors, the literature review would be divided into sections and completed by each collaborator before being assembled into the final literature review. Some mentioned collaborating with librarians when doing a literature review, but literature reviews appear to be primarily solitary tasks.

How Respondents Learned to Craft Literature Reviews

Formal literature review instruction seems to end with PhD programs. The indication is also that the instruction in graduate programs focused more on finding articles than what to do with the articles after they are assembled. Mention was made of receiving assistance in locating relevant articles but not what to do with analyzing them. One faculty member talked about “learning the hard way.” Respondents referred to “guidance” and “consultation” rather than being presented with a step-by-step process. After finding it, formal instruction on what to do with an article was not given. A common approach to “figuring it out” was looking at other articles to help them with the analysis and writing. Seminars were used in a number of graduate programs, but the burden was on the individual student to prepare the literature review and then receive critiques. In some cases, sample literature reviews were shared with the students.

Other materials are used after the graduate programs. Several respondents talked about learning on their own or learning by doing. Some consulted materials such as books. The predominant current approach however is learning by doing. Interviewees mentioned not having formal training and using journals to understand the literature review. A few mentioned consulting with peers for assistance. Respondents did not mention any analysis tools such as NVivo or Atlas.ti. Writers are currently not availing themselves of analytical tools that could speed up the analysis.

Steps for Crafting Literature Reviews

This section of the interviews focused on the steps after the articles had been gathered. When respondents referred to literature reviews, they kept discussing how to find articles and had to be refocused on what to do once they had the articles. Once they focused on how to analyze the articles, although there were some similarities, each respondent described a different approach to analyzing the content of the articles. Some of the common approaches are listed in Table 3.

**TABLE 3
APPROACHES TO ANALYZING ARTICLES**

Word or Excel documents	Excel documents were used primarily to create an index of articles. Word documents were used to make comments and take notes.
Highlighting	Use of highlighters to identify common topics was widely used.
Notes	Notes were taken on the computer or on hard copies of the articles. Post-it notes were used for note-taking and sorting.
Piling Technique	Articles were frequently printed out and piled according to the subject.
Reading	All respondents reported doing a lot of reading, usually starting with the abstract and/or citation to determine the relevance of a particular article.

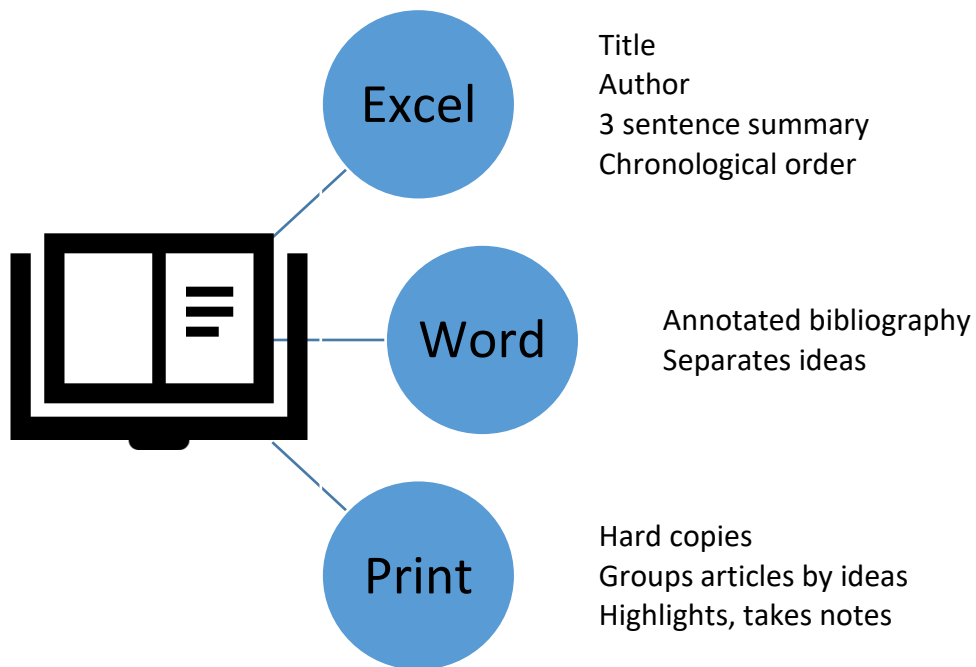
Other than Word and Excel, software tools were not mentioned as part of the analytical process. With both Word and Excel, the information was entered manually and required a lot of effort. None of the techniques that were described were very efficient. All procedures were very different, time-consuming,

and somewhat clunky. One respondent described her technique as “old school.” No general consensus about how to analyze articles existed in this sample.

Many spoke of preferring to examine a hard copy rather than read an article on the computer. Yet in many cases they transferred notes or other information to computer files. The processes are an odd mixture of handwork and computer usage. Reading and rereading were mentioned consistently throughout the interviews.

To show the complicated approaches used, an example of one respondent’s process is listed below in Figure 1:

FIGURE 1
SAMPLE LITERATURE REVIEW ANALYSIS PROCESS



The amount of time required by a process like this is significant, and other processes described were just as involved. The question is whether strategies can be developed to smooth out this process and develop a more efficient approach to conducting literature reviews.

Biggest Challenges

Some similarities existed, but basically each respondent followed a different process. Despite that, there was some consistency in the challenges and difficulties they experienced. Putting everything together was listed as a major challenge. Respondents were overwhelmed with determining what to include and how to tell the story. Additionally, they struggled with how to deal with contradictory information, and how much was enough for the literature review. Researchers expressed frustration with trying to conceptualize the big picture.

Although most respondents wanted to do the literature review all at once, most admitted that it was just not possible given time constraints and other restrictions. Because they could not complete it at one time, they were challenged to try to remember what had already been done and keep that information organized. The end result was that they would find themselves rereading and resorting, in other words, duplicating what had already been done. As one respondent put it, “When I start working on something and then stop and do something else, it is double the time.” Several respondents tried to put in a significant amount of

time at the beginning of the literature review to help them focus and remember. All of the processes described were inefficient.

Some participants expressed that the literature review is the hardest part of the article. Respondents mentioned how time consuming the process is and feeling like they had to review everything. The volume feels overwhelming and respondents complained about having to duplicate their efforts. No clear-cut solutions emerged during the interviews. Words and phrases such as the following were used when talking about challenges and difficulties:

- Inefficient
- Have to go back and reread
- Keeping track of everything
- Difficult to find something (existing notes)
- “It is very hard to build some sort of continuation”
- “I just feel like I waste a lot of time, by rereading stuff because I do not remember it.”
- “I use the dinosaur approach.”
- “As soon as I get interrupted my rhythm goes away and I feel like I am starting over again.”

Trying to figure out how to say things in the literature review was also challenging. Some felt that it had already been said the best way in the articles they reviewed. Putting things in their own words, figuring out the flow, and transitioning frustrated respondents. Another issue was trying to make connections to the literature in the field. A more recent challenge is the time necessary to ensure the validity of the sources. One respondent found literature reviews challenging because he felt he did not have enough experience at literature reviews and grappled with inertia when trying to complete one.

A challenge mentioned by respondents, which is probably the easiest is to address, is the lack of training or education on how to analyze articles. As discussed previously, respondents’ training on literature reviews often ended with graduate courses and many mentioned “learning by doing.” Resources that address additional training or education on how to analyze information for literature reviews either does not exist or is not something with which researchers are familiar.

Potential options exist to help with these challenges if they can be developed and/or promoted. One potential strategy is the use of technological tools to help organize and search the data (articles).

Tool Respondents Used to Analyze Data

As described by the respondents, the majority of the methods were paper-based and “old-school” involving printing out articles, writing notes, and using highlighters and post-it notes. Copying and pasting either by hand or on the computer were frequently done. None of the respondents mentioned using software such as NVivo, a qualitative data analysis package.

NVivo

One of the computer-related tools most discussed in articles, NVivo, is a software product intended to assist qualitative researchers with coding, analyzing, and organizing their data that can be easily extrapolated to creating literature reviews. To illustrate how computer-related tools can assist with literature reviews, the following briefly presents how NVivo can assist researchers with literature reviews. NVivo provides users with the ability to upload qualitative data pieces, such as interview/focus group transcripts, questionnaires, journal entries, etc., into the NVivo environment, and then memo, highlight sections of texts, and arrange sections using the hierarchical coding system (similar to having files on the computer) in order to build a coherent structure. NVivo users can also conduct searches on inputted data and model/map the data to ascertain trends and patterns. While most scholars use NVivo with texts, the software has the capability to handle multiple forms of media (audio, video, pictures) in addition to print.

Using NVivo for Literature Reviews

The crafting of a literature review is very similar, except the texts under analysis are secondary sources rather than raw data. As such, journal articles, presentation proceedings, etc. can be easily imported into and manipulated within NVivo to assist with data analysis and theme generation. Additionally, NVivo can

accommodate both deductive and inductive literature review strategies in that users can determine the code structure beforehand by identifying topics and hierarchy or allow the code structure to emerge by reading articles and other sources and seeing what topics develop from the review. Within the NVivo environment, both types of analysis are enhanced by the software's features, which include total document searching, contextual linking from description codes to the original sources, and the ability to conduct queries on the imputed data. However, while NVivo can assist with analysis, it cannot locate sources or direct the literature review; that is the responsibility of the researcher.

Understanding Usage – Comparison of Tools

Articles have been published that describe qualitative tools and providing instructions on how to use them with literature reviews (Bandara, 2006; Bandara, Furtmuller, Gorbacheva, Miskon, & Beekhuyzen, 2015; Bandara, Miskon, & Fielt, 2011, Di Gregorio, 2000). However, many academics do not use computer-related tools, relying on older methods such as those previously mentioned. Therefore, an important question is why these tools, which provide more options, especially the ability to more easily organize and search sources, are not more widely used by business scholars. A better understanding of this area is needed.

IMPLICATIONS AND POTENTIAL SOLUTIONS

It is clear that literature reviews would be enhanced by additional education and developing a smoother process, most likely using qualitative data analysis tools. The lack of formal instruction in analyzing literature review articles must be addressed during and after graduate programs. Learning by doing and trying to use other articles as models perpetuates the process's inefficiencies. Tools that would reduce duplication of effort are not known by the respondents sampled and/or researchers are reluctant to use them. Research would be enhanced by improving the knowledge of and ability to use qualitative software tools such as NVivo.

LIMITATIONS AND FUTURE RESEARCH

Potential limitations for this study are the university's size and the focus on the School of Business. Additional research needs to be done across other disciplines and different sizes of schools.

Numerous opportunities for future research exist such as determining if a time-saving process can be developed, possibly using tools such as NVivo. Also, examining other schools and disciplines would help to identify how widespread the inefficiencies are. Finally, identifying which tools would help make the process more efficient and determining how to increase the awareness and use of these tools would assist researchers in avoiding duplication of effort and organizational issues.

Future research could provide information about qualitative research tools focusing on topics such as:

- More information on how business and other scholars currently organize literature reviews
- Level of awareness of available tools
- What tools they currently use to help them with literature reviews
- What they like about the tools
- What they dislike about the tools
- What questions they have about the tools
- Why they will or will not use them in the future

Strategies can then be developed to improve the understanding of how to analyze sources for literature reviews and how to conduct more efficient literature reviews.

In conclusion, the premise of this article is that opportunities exist that would help the researcher to deal more efficiently with the large amount of information on different subjects uncovered during the literature review. Tools can be explored and strategies can then be developed to help business scholars more easily and efficiently conduct literature reviews.

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