Dr. Roby's Completely Doable 10-Step Plan for Writing a Literature Review

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A literature review is your opportunity to demonstrate a mastery understanding of the research contributed to the body of knowledge for your chosen area of research. The lit review helps you situate your own research among the existing body of knowledge and identify and establish the contribution that your research will make. My 10-step plan for writing a review of scholarly literature consists of six phases: (1) getting ready (2) gathering the research, (3) synthesizing the research, (4) building the outline, (5) analyzing the data, and (6) fleshing out the skeleton. What follows is simply my process for writing a literature review when I write, not a formal model. But it works.

GET READY

Step 1. Set Up Your Computer Work Space

a. On your computer hard drive, make a folder for the topic that you want to research. Call it something intuitive like **research2012** or **thesis** or **dissertation**
b. Within that folder, create a folder called **literature review**
c. Within that folder, create three more folders: **maybe, yes, no**
d. Write a list of key phrases related to the topic that you want to research. Don't leave out or eliminate any potential key words.

GATHER THE RESEARCH

Step 2. Search Your Library Databases for Potential Articles

a. Conduct a library databases search on each of your key terms. As you are searching, make note of any author-supplied key phrases that show up repeatedly and add those phrases to your list, too.

b. As you search during this phase, read the article title and the abstract **only**. If they look even remotely related to your topic, save a PDF or HTML copy to the **maybe** folder that you created on your computer or print a copy of the article and **KEEP MOVING** (this is very important; some people get stuck here trying to read all of the articles at this point).

c. When saving the file, change the cryptic database name of the file to something more intuitive, such as last name of the first author and the year of the article (for example, **jones2012.pdf**). This will make locating specific articles later much easier.

d. While saving articles to your **maybe** folder, also save the APA citation for the article if given the option by the database (each database is different, but most have a citation generator). This will save you DAYS of time later when organizing your references.

e. Do an **exhaustive** search, meaning keep looking for related articles until your searches cease to provide new articles to review. With current topics (like certain educational technologies), search for articles that go back about 10 years (in our field, I prefer 5 – 7), in education, learning theory, and pedagogy, you can go back much further for established research data.

After you have identified all of the potential articles, it is time to decide which will be included in the literature review.

Step 3. Sort Through the Collected Articles

a. Access the **maybe** folder and select an article.

b. Upon opening the article, turn immediately to the references.

c. Make sure the references are current with respect to the year of the article itself and the year you are reading it.

d. Make sure you see the names of experts who *should* be included in such an article (for instance, if it is an article on design of collaborative learning, you should see Jonassen, Dede, Reigheluth, etc. listed in the references). If not, proceed critically.

e. **Scan** the article to make sure it has useful information pertaining to your topic. You are looking for key words and phrases to jump out at you. If it does, move this article to the **yes** folder. If it does not, move it to the **no** folder. **Do not** delete anything from your **no** folder until the literature review is completely finished.

f. Remember, you are not deep reading yet, just scanning for alignment with your topic. Repeat this for all articles you have saved in the **maybe** folder.

Step 4. Deep Read the Chosen Articles

a. Now read each of the articles in the **yes** folder, highlighting what you consider important information. If you have Adobe Acrobat Pro on your computer, you can highlight electronically and re-save the PDF with the highlights.

b. If after reading the article you find that it is not pertinent at all, move it to the **no** folder, but don't delete anything.

Step 5. Gather More Resources

a. Go back through all of the articles that remain in the **yes** folder. Make note of any highlights that you made that were direct quotes from other researchers or references to other writings. Look in the article's references for those items and then GO AND GET THEM. If it is a journal article, look it up. If it is a book, go and check it out from the library. Follow Steps 2c – 4b for these articles.

b. For every single article that is in your **yes** folder, read through the reference list and make note of any reference that seems interesting and appropriate and then GO AND GET IT. That reference is now yours! Save it to your **maybe** folder and follow Steps 3 – 4 for these materials. This is how an exhaustive search can get so exhausting!

By the end of this step, you have reached a major milestone. You now have the research that will constitute your literature review. Congratulations!

SYNTHESIZE THE RESEARCH

When you synthesize scholarly research you are showing that you: 1) have read, 2) now understand, and 3) can find relationships among data from various sources. This part of the process can be fun AND challenging.

Step 6. Gather the Highlighted Information

a. Create an Excel spreadsheet called **themes** and save it in your **literature review** folder. I highly recommend using Excel over creating a table in MS Word because you will use the sorting feature very often during this phase.

b. In the spreadsheet, create four headers: **Readings**, **Topic**, **Subtopic**, **Order.**

c. For each separate highlighted section in each article, copy and paste the selection into a single cell in the **Readings** column.

d. MAKE SURE that after you paste the selection, you include the author's name, the year of the article, and the page on which the highlighted selection appeared. This step is very important. You will do a full citation later. But doing this now saves you from later scouring through your articles for hours trying to find who said it, in which article, and on which page.

e. If the highlighted text is very large, you can also paraphrase if you don't plan to use it as a direct quote. Still remember to include the author, year, and page.

Example:

Readings	Topic	Subtopic	Order
Neomillenial Learning Style is the use of multiple forms of media, collaborative learning, experiential, reflective, and mentored learning, nonlinear expressions of ideas and creating individualized learning experience. (Dede, 2005, p.16).			

NOTE: Topic and Order columns remain empty during this step.

Step 7. Group the Readings

After you paste the highlights into Excel, start grouping the readings. You will begin to see some patterns. That's when it gets exciting!

a. Read what you have in the **Readings** column and enter a short phrase that represents the theme of that reading in the **Topic** column.

b. Reuse topic names if the readings have similar themes and combine similar topics if possible and appropriate.

c. Every so often, sort your spreadsheet by the **Topic** column. You will begin to see your groupings and themes emerge.

d. If you think a reading belongs in multiple **Topic** areas, create a new row, copy and paste the **Reading** text into a new row and add the other **Topic** name.

Example:

Readings	Topic	Subtopic	
"Knowledge is theory put into practice" (Nguyen, 2004)	Definitions of Knowledge		
"A learner may receive information but she alone must convert that information to knowledge." (Shrenk, 1998).	Definitions of Learning		
"Knowledge is information that a user discerningly applies." (Roby, 2008)	Definitions of Learning		
"Knowledge is power." (Aclicks, 2002)	Definitions of Learning		

e. After you do a sort so that your **Topic** groupings are collocated, see if there are subtopics present within the overall topic.

f. If there are subtopics present, provide names in the **Subtopics** column in the same manner that you did for the **Topic** column.

Example:

Readings	Topic	Subtopic	Order
"Knowledge is theory put into practice" (Nguyen, 2004)	Definitions of Knowledge	Transference	
"A learner may receive information but she alone must convert that information to knowledge." (Shrenk, 1998).	Definitions of Learning	Transference	
"Knowledge is information that a user discerningly applies." (Roby, 2008)	Definitions of Learning	Transference	
"Knowledge is power." (Aclicks, 2002)	Definitions of Learning	Equity/Access	

h. At this point, you can further synthesize by replacing some of your grouped readings with a paraphrase and adding a multiple-works citation.

i. Perform another sort so that you end this step with a sorted collective of **Topics** and **Subtopics**.

Example of how this will ultimately look in the literature review:
Researchers assert that knowledge is the transferred application of learned information (Nguyen, 2004; Roby, 2008, Shrenk, 1998).

NOTE: Notice that the author named Aclicks from the earlier examples is not included in this synthesis because that author says something *in contrast* to what the others say. Deal with that in the analysis step.

Grouping (also referred to as thematic analysis or coding) is a very iterative process. It may take some time before you are satisfied with your groupings and themes. Once you are, you can proceed to the next step.

BUILD THE OUTLINE

Step 8. Create the Structure for the Paper

a. Within each **Topic** and **Subtopic** area, decide the order in which you will address the information. This will likely be adjusted, but make a pass at it.

b. Open MS Word and create an outline for your paper based on the **Topic** and **Subtopic** groupings. By doing this, you should be able to see where your strongest points are (more data + more researchers = stronger points), where your weakest points are (little information + unsupported statements = weaker points), and where you need to do more research to find more data.

c. Add a placeholder for areas that you need to add to your literature review.

Now that you have an outline for the paper, celebrate your success!

ANALYZE THE DATA

After you have accounted for and synthesized what everyone else has to say, it is time to scrutinize what you've collected and begin to inject your informed opinion. Be careful, because you still don't have "an opinion" yet. So you substantiate **facts** through citation. For example, from your research, do you see where a well-respected instructional design theory may be limited when considering the constructivist viewpoint? Do you notice experts in the field leaning toward a new or revised philosophy of the purpose of technology? Did you find a limited amount of research in an emerging area? Do you observe conflict of opinion on theoretical frameworks between among researchers in the field? Identify such things here. But substantiate everything you say here. Your readers will be able to tell your position by how much attention you pay to a particular topic. If you write for two pages on the benefits of active learning, adding dozens of citations but then you write just two sentences on the merits of rote learning with far fewer citations, your readers will deduce that you are a proponent for active learning. As a caution, though, you must acknowledge contrary or non-supporting data in your literature review if it exists to counteract bias and show rigor and thoroughness in your research.

Step 9. Add your notes to the outline

a. Re-read what you included in the **Readings** column of your Excel spreadsheet. Take note of the relationships between the readings.

b. Add your observations to your outline right under the heading for the topic or subtopic where appropriate.

c. Don't worry about being eloquent yet; you will do that later and right now, you just need to get your thoughts out before you forget them.

d. Re-read your notes. Be careful not to contradict yourself.

e. If there is something that you wish to include in the paper and you KNOW you can support it with data or a quote from a respected researcher, but you don't currently have that source, write down a paraphrase of what you wish to include and then right

next it, write **[cite]** to remind yourself to go and find that reference later. Don't stop to look for it now; you might lose your momentum!

Example:

Culture-inclusive and identity-inclusive lessons and assignments promote engagement for English language learners [cite].

NOTE: **[cite]** should remind you to go and look for a source later and then add the citation to the paper when you find it.

FLESH OUT THE SKELETON

Once data gathering, synthesis, and analysis are complete it is time to write this thing!

Step 10. Write the Paper!

a. Magically, through your groupings and your outline, you should see the beginnings of a real paper. Go back through your jerky outline of the paper and fill it in with full, grammatically correct sentences and well-written, well-structured paragraphs. Re-read it as many times as it takes to clean it up and to give it the "voice" you want it to have. Remember, you are likely writing for an educated reader, but not necessarily someone in your field. It is better to over-explain and edit then to assume too much about your reader's connection to the content.

b. Follow the required style guide for citations and format as you are writing. It can be a very time consuming process to try to correct it afterward.

c. After you are finished with writing, create your reference list. A skilled reviewer would want you to make it available so she or he can consult your reference list while reading the chapter for you.

d. Give your completed lit review and reference list to someone else to read and ask for critical, constructive feedback. Preferably, ask someone who represents your intended audience. If you don't have a peer reviewer, partner up!

e. Discerningly incorporate the feedback you received from your peer reviewer and make additions as you find appropriate. Make what you THINK are your final changes. Stay away from the document for at day or two. Then pick it back up and read it again.

f. Release it. This part can be very difficult – and scary for some. When it is done, let it go and move forward.

Enjoy your new knowledge. By the end of this process, you OWN it!

Don't Forget: Provide Proper Citation

This is not a tip. You know better. Be careful to not represent some else's words as your own and to give credit where it is due.

Additional Tips

- Do not get stuck by trying to start your writing with your introduction. Your intro is actually the very LAST thing you should write for each chapter. The introduction is not for you, the introduction is an advance organizer for your readers; in it, you will tell them what you are about to tell them. Write the chapter first, go back through the chapter and highlight your best sentences, and make the intro based on those sentences.

- Don't limit yourself by the databases accessible through your university library and DO NOT PURCHASE ANY JOURNAL ARTICLES OLINE. If you read an abstract for an article that you cannot access because your library does not subscribe to that database, you can request a copy of that article though your library's document delivery service on the library website or by visiting the library in person. Your library can obtain a copy of that article though its partnerships and network with other libraries.

- Likewise, if you need access to a book that is not shelved in your library, you can apply for an inter-library loan (online or in person). The book will be delivered to your library and loaned to you as if it were a book in your collections.

- Never include circular resources in your paper. A circular source is when you quote Jones who quoted Benson who quoted Anderson who quoted Jones all on the same topic. It is also when two people who write together all of the time and quote each other. For example, if Carey quoted Wilson and Wilson quoted Carey on the same topic. A secondary citation is when you quote an author in a paper who is actually quoting someone else (the primary source). Find out who is being quoted, go and get the primary source, read it, and use that.

- Don't assume your readers know the buzzwords or theoretical frameworks and models that you reference in your paper. The importance of the word, framework, or model to the paper should dictate the detail that should be dedicated to explaining it.

- Never use slang, colloquialisms, jargon, sayings or the like. Any such use of language is inappropriate for this type of writing, except when quoting participants in qualitative research.

- Every single fact, every single piece of data MUST be paired with an in-line citation. Must be. MUST BE. You might feel like you are being redundant and maybe even condescending. But you HAVE to do it. You are establishing your connection to the existing research and demonstrating your awareness and understanding of it.

- An in-line citation requires the author's name and year the journal article, report, or book was written. Please make sure you ALWAYS use correct APA formatting for your in-line citations. Those of us who are used to seeing in-line citations immediately recognize when it is not used appropriately.
  Do not write in 1st person EXCEPT if is the portion of your thesis that requires you to reveal your research biases. That portion of your thesis is appropriately titled "Researcher Biases" and allows you to state how your own biases affect how you approach your research topic and how you are actively trying to be NON-biased in your research.

- Never inject your personal opinion in your research paper anywhere in the paper except for the researcher biases, summary, or conclusion section. The way you represent your opinion in the body of your paper is to include and cite research that supports your opinion. Please see statement #2 and #4. As a caveat, you MUST acknowledge non-supporting data if it exists to counteract bias and show rigor and thoroughness in your research.

- If you are quoting another author, you MUST include a page number, regardless of how short the quote may be. If you are using a long quote (if the text spans 4 lines or more), use a block quote. Still include the name of the author and page number.

- Resist overuse of direct quotes. Overuse suggests a lack of mastery of the concepts. Trust your own voice. Rules of thumb for direct quotes: 1) Unless the direct quote is unique or memorable, restate it and cite it, and 2) Don't include more than one direct quote per page of your thesis or paper. Less than that is better.

- Every single author quoted in your paper MUST appear in your reference section. Conversely, EVERY SINGLE author listed in your reference section MUST be in-line cited somewhere in your paper. MUST. The librarians will check for this and send your thesis back to you if they do not match.

- Don't end your sentences with a preposition (in, on, about, etc.) unless direct quoting (Roby peeve).

- **When to Use Think, Feel, Believe**
  Keep this in mind as you are writing:

  Feel - Sense/Perception (do not use this to express a thought or opinion)
  Think - Opinion (can use this word)
  Believe - Conviction or principle; value (can use this word)

  The words "feel" or "believe" are not typically used in a literature review or scholarly writing except when used in qualitative research. Still, you have to choose when to use think or believe when you do use it. 'Believe' is a stronger, more personally connected word than the word 'think.' Consider these examples:

  "Teachers believe students' needs should be at the center of the learning experience." (conviction)

  "Parents think that homework assignment is too long for first graders." (opinion)