Introduction to Literature Reviews

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REVIEW OF EDUCATIONAL RESEARCH

PennState
College of Education

Agenda

- Myths about Literature Reviews
- Realities about Literature Reviews
- RER Perspective
- Step-By-Step Guide

1

Myths about Literature Reviews

What is a Literature View and What is Not?

Six Myths about Literature Reviews

Myths 1-3	Myths 4-6
1. The literature review has only one goal – inform primary research.	4. The literature review is a summary of the extant literature.
2. The amount of literature determines the importance of the topic.	5. The literature review only includes published works.
3. Literature reviews are value neutral.	6. The literature review is all like the Chapter 2 of your thesis/dissertation.

Onwuegbuzie, A. J., & Frels, R. (2016). *7 steps to a comprehensive literature review.* Thousand Oaks, CA: SAGE Publications.
The Writing Center at University of Colorado (n.d.). Writing a literature review. Retrieved from http://www.ucdenver.edu/academics/colleges/CLAS/Centers/writing/resources/Documents/Handouts/Literature%20Reviews.pdf

2

Realities about Literature Reviews

1. Purpose of literature reviews
2. Visualizing LITERATURE and REVIEW
3. Types of literature reviews

Purpose

- Present the context and background of a particular topic of interest.
- Examine the academic conversations surrounding the topic by linking relevant literature.
- Explore new ways to interpret the reviewed works while resolving conflicts among them.
- Identify the gaps in the literature as well as directions for future research.

Bryant, N. (2013). *Research guides: Write a literature review: Your first literature review*. Retrieved from http://guides.library.vcu.edu/lit-review

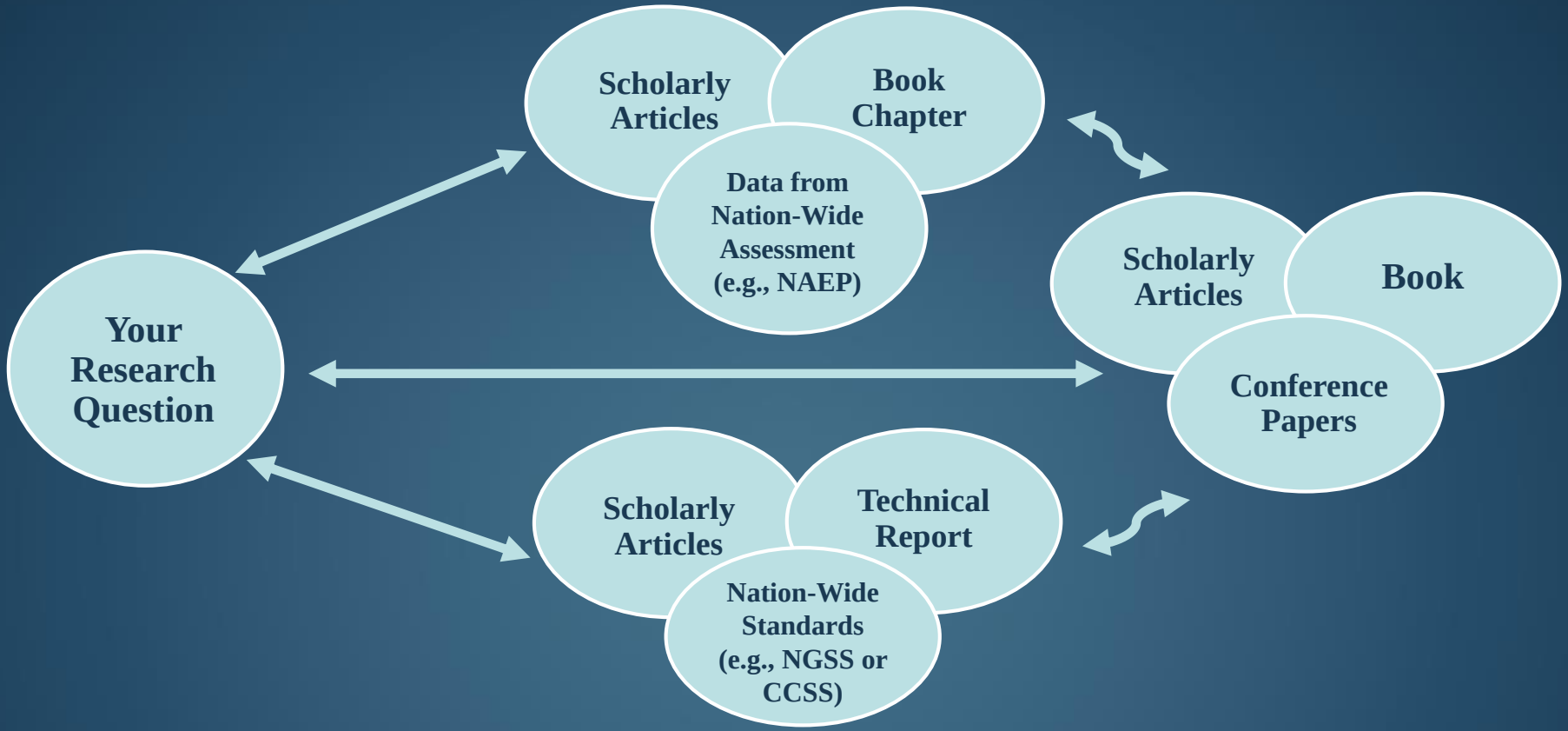
Visualizing *LITERATURE*

Sample Research Question:

What role does small-group discussion play in promoting scientific literacy?

The Library Guide at Virginia Commonwealth University. (n.d.). *Visualizing literature and review*. Retrieved from http://guides.library.vcu.edu/ld.php?content_id=1720470

Visualizing *REVIEW*



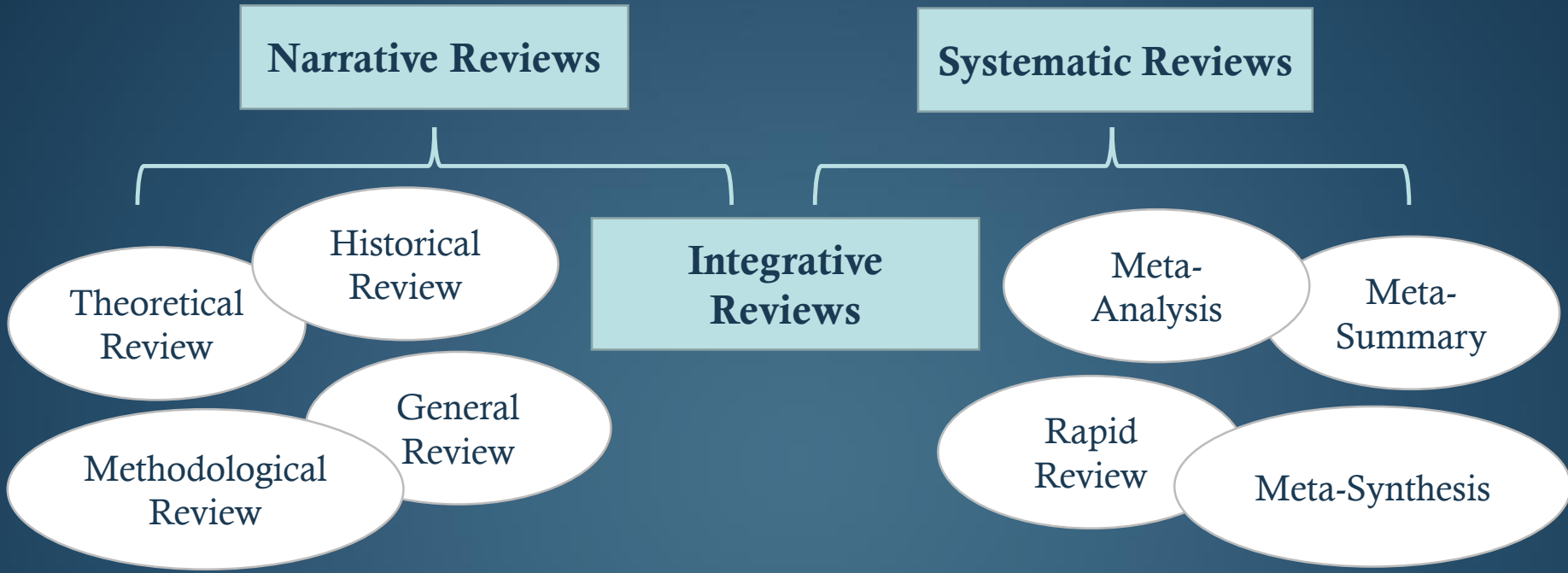
The Library Guide at Virginia Commonwealth University. (n.d.). Visualizing literature and review. Retrieved from http://guides.library.vcu.edu/ld.php?content_id=1720470

Types of Literature Reviews

- **Traditional Reviews**
  - Narrative Reviews
  - Systematic Reviews
  - Integrative Reviews
- **Best-Evidence Synthesis**

The Library Guide at Virginia Commonwealth University. (n.d.). Visualizing literature and review. Retrieved from http://guides.library.vcu.edu/ld.php?content_id=1720470

Branches of Traditional Reviews



(Onwuegbuzie & Frels, 2016, p. 24)

Onwuegbuzie, A. J., & Frels, R. (2016). *7 steps to a comprehensive literature review.* Thousand Oaks, CA: SAGE Publications.

Branches of Traditional Reviews

Narrative Reviews

- ***Summarize*** and ***critique*** the literature about a topic, ***without integrating*** either quantitative or qualitative findings.
- ***Broadly overview*** a topic instead of addressing a specific question (e.g., how effective an intervention is in promoting a particular outcome).

Onwuegbuzie, A. J., & Frels, R. (2016). *7 steps to a comprehensive literature review.* Thousand Oaks, CA: SAGE Publications.

Branches of Traditional Reviews *Narrative Reviews*

Review Type	Definition
General Review	Reviews the critical aspects of the extant literature by extracting the findings, conceptual, theoretical, as well as methodological contributions (e.g., introduction to a research, thesis, or dissertation).
Theoretical Review	Examines how theory shapes research while explicating and illuminating a theory.
Methodological Review	Describes research design and methods (e.g., sampling size, sampling scheme, instrumentation, or procedures) and outlines the strengths and weakness of the methods.
Historical Review	Provides explanations for phenomena and frame them within historical events.

Onwuegbuzie, A. J., & Frels, R. (2016). *7 steps to a comprehensive literature review.* Thousand Oaks, CA: SAGE Publications.
RER. (2011). Aims and scope. Retrieved from https://us.sagepub.com/en-us/nam/review-of-educational-research/journal201854#aims-and-scope

Branches of Traditional Reviews

Systematic Reviews

- ***Critically evaluate*** all research studies about a particular research question.
- Must have **FOUR** attributes:
  - Explicit inclusion/exclusion criteria;
  - A transparent search strategy;
  - Systematic coding and analysis of included studies; and,
  - Some form of synthesis of the findings.

Onwuegbuzie, A. J., & Frels, R. (2016). *7 steps to a comprehensive literature review.* Thousand Oaks, CA: SAGE Publications.

Branches of Traditional Reviews *Systematic Reviews*

Review Type	Definition
Meta-Analysis	"Combines quantitative findings from as many available individual quantitative research studies as possible" to: (a) "estimate the mean effect size across the included studies," and (b) "examine the variability of effect sizes across studies as a function of study design effects" (pp. 25-26).
Rapid Review	Synthesizes evidence within a short period of time to inform government policymakers or healthcare administrators.
Meta-Summary	"A form of systematic review or integration of qualitative findings in a target domain that are themselves topical or thematic summaries or surveys of data" (Sandelowski & Barroso, 2003, p. 227).
Meta-Synthesis	Also known as qualitative meta-analysis which represents an interpretive analysis to test and develop theory as well as to understand and explain phenomena.

Onwuegbuzie, A. J., & Frels, R. (2016). *7 steps to a comprehensive literature review.* Thousand Oaks, CA: SAGE Publications.

Branches of Traditional Reviews

Integrative Reviews

- *"Pull together* the existing work on an educational topic and work to understand trends in that body of scholarship."
- *"Describe* how the issue is conceptualized within the literature, how research methods and theories have shaped the outcomes of scholarship, and what the strengths and weaknesses of the literature are."

RER. (2011). Aims and scope. Retrieved from https://us.sagepub.com/en-us/nam/review-of-educational-research/journal201854#aims-and-scope

Best-Evidence Synthesis

An Alternative to Meta-Analysis

- Combines the quantification of effect sizes and systematic study selection procedures of quantitative syntheses with the attention to individual studies and methodological and substantive issues typical of the best narrative reviews.
- Focuses on the "best evidence" in a field, the studies highest in internal and external validity, using well-specified and defended a priori inclusion criteria, and use effect size data as an adjunct to a full discussion of literature being reviewed.

(Slavin, 1986, p.5)

Slavin, R. (1986). Best-evidence synthesis: An alternative to meta-analytic and traditional reviews. *Educational Researcher, 15*(9), 5-11.

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RER Perspective

1. **Guidelines from *Review of Educational Research***

   For more information about RER, please visit: http://journals.sagepub.com/home/rer

Guidelines from RER

- ***Purpose***

  "The purpose should be to connect the particular problem addressed by the researchers to a larger context of education."

- ***Significance of the Topic***

  "While these questions may be board, they should have implications for the educational problems and issues affecting our national and global society."

RER. (2011). Aims and scope. Retrieved from https://us.sagepub.com/en-us/nam/review-of-educational-research/journal201854#aims-and-scope

Guidelines from RER

- ***Data Sources***

  "The literature that serves as the database for the interrogation should be explicitly identified. The criteria for inclusion / exclusion of studies should be clearly delineated. Provide a tabular listing of the data sources either in text, table, reference list. Consult *The PRISMA Statement* on *Reporting Standards for Research in Psychology*."

RER. (2011). Aims and scope. Retrieved from https://us.sagepub.com/en-us/nam/review-of-educational-research/journal201854#aims-and-scope

Guidelines from RER

- ***Quality of the Literature***

  "Authors should attempt to review all relevant literature on a topic (e.g., international literature or cross-disciplinary work) that provide explicit conceptual and methodological details (e.g., in text, tables, or appendices) to substantiate the findings."

RER. (2011). Aims and scope. Retrieved from https://us.sagepub.com/en-us/nam/review-of-educational-research/journal201854#aims-and-scope

Guidelines from RER

- ***Quality of Analysis***

  "The review should: (a) go beyond description to include analysis and critiques of theories, methods, and conclusions in the literature, (b) examine the issue of access – which perspectives are included or excluded, (c) advance a thesis that emerges from the authors' synthesis, and (d) be reflexive – how does the scholars' work constrain what can be known in the review."

RER. (2011). Aims and scope. Retrieved from https://us.sagepub.com/en-us/nam/review-of-educational-research/journal201854#aims-and-scope

Guidelines from RER

- ***Advancement of the Field***

  "The review should validate or inform the knowledge of researchers and guide and improve the quality of their research and scholarship and advance a conceptually-, empirically- or methodologically-driven argument."

- ***Balance and Fairness***

  "Do not misinterpret others' positions or be disrespectful of contrary positions."

RER. (2011). Aims and scope. Retrieved from https://us.sagepub.com/en-us/nam/review-of-educational-research/journal201854#aims-and-scope

4 Step-By-Step Guide

1. Steps to conducting a high-quality literature review
2. Common problems: Experience from RER

Step-By-Step Guide

Step 1. Decide on a topic
Step 2. Search and select the literature
Step 3. Organize and share information
Step 4. Analyze and synthesize the literature
Step 5. Write a review

Mongan-Rallies, H. (2014). Guidelines for writing a literature review. Retrieved from http://www.duluth.umn.edu/~hrallis/guides/researching/litreview.html
Onwuegbuzie, A. J., & Frels, R. (2016). *7 steps to a comprehensive literature review.* Thousand Oaks, CA: SAGE Publications.
Pautasso, M. (2013). Ten simple rules for writing a literature review. *PLOS Computational Biology, 9*(7), 1-4.

Step 1. Decide on a Topic

1	Do you recognize the differences among quantitative, qualitative, and mixed methods research?	If not, revisit published works on the subject and identify the research tradition.
2	Can you identify a topic that you are interested in?	If not, identify a topic that is interesting, important, and well-defined. Speak with experts in the topic area and pay attention to the language and key terms they use.
3	Have you identified a problem statement?	
4	What might be the working title of your literature review?	You have now focused further your idea and will be prepared to search databases.

Onwuegbuzie, A. J., & Frels, R. (2016). *7 steps to a comprehensive literature review.* Thousand Oaks, CA: SAGE Publications.
Pautasso, M. (2013). Ten simple rules for writing a literature review. *PLOS Computational Biology, 9*(7), 1-4.

Step 2. Search and Select the Literature

Simple Rules While Searching Literature

- Keep track of the search terms you use
- Use different keywords and database sources (e.g., ERIC, PsycINFO, JSTOR, or Google Scholar)
- Refer to top journals and scholars
- Use a paper management system (e.g., Mendeley)
- Define early some criteria for inclusion and exclusion
- Be up-to-date, but do not forget older studies
- Seek both previous reviews and research papers about the topic

Pautasso, M. (2013). Ten simple rules for writing a literature review. *PLOS Computational Biology, 9*(7), 1-4.

Step 2. Search and Select the Literature

Example

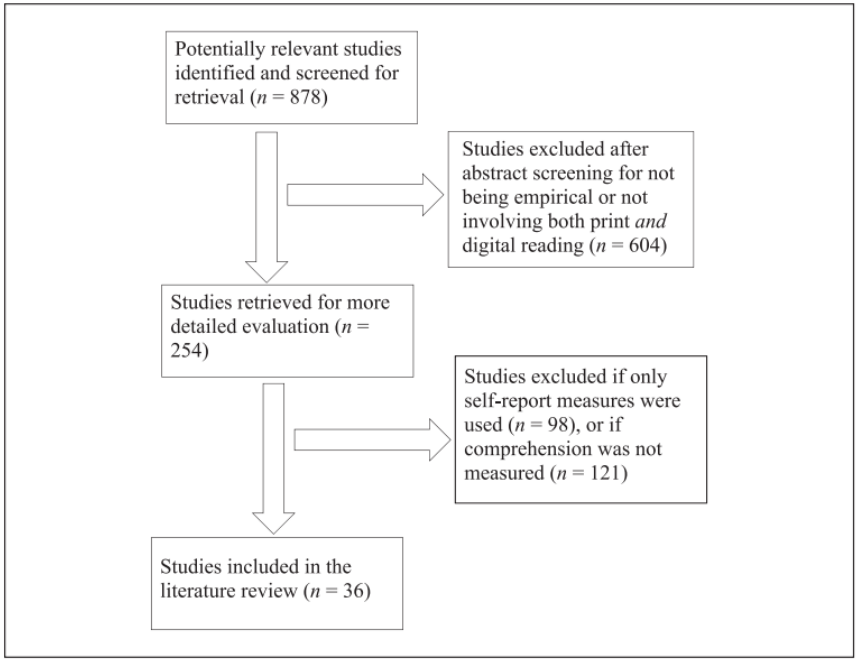

FIGURE 1. *Diagram of article search and screening steps taken to mark studies for exclusion and inclusion in the literature review.*

TABLE 1

Journals hand searched for relevant studies

Computers & Education
Contemporary Educational Psychology
Journal of Educational Psychology
Journal of Experimental Education
Journal of Literacy Research
Review of Educational Research
Reading Psychology
Reading Research Quarterly

TABLE 2

Vitas of specific authors searched for relevant publications

Azevedo, R.
Cromley, J. G.
Coiro, J.
Eshet, Y.
Kuriawan, S. H.
Larson, L. C.
Leu, D. J.
Mangen, A.
Noyes, J. M.
Reinking, D.
Roswell, J.
Sutherland-Smith, W.
Zawilinski, L.

Singer, L. M., & Alexander, P. A. (2017). Reading on paper and digitally: What the past decades of empirical research reveal. *Review of Educational Research,* advanced publication online.

Step 2. Search and Select the Literature

Selecting High-Quality Articles for Review: Example

Nine Quality Indicators (Graham et al., 2012)

- High quality design
- More than two groups or classes in each condition
- Teacher effects controlled
- Attrition
- Pretest equivalence
- No floor or ceiling effects at pretest and posttest
- Reliable measures
- Treatment fidelity

Graham, S., Kiuhara, S., McKeown, D., & Harris, K. R. (2012). A meta-analysis of writing instruction for students in the elementary grades. *Journal of Educational Psychology, 104*, 879-896.

Step 3. Organize and Share Information

Building a Table to Organize and Share Information

Summary and classification of articles

Study	Participants	Description of argument activity	Nature of activity	Emphasis of activity	Aspects of science in activity
Albe (2008)	12 Grade 11 students	After evaluation of research abstracts, students presented arguments in the form of a role-play. Set in the context of a court case, students served as expert witnesses in which an employee was suing his employer alleging that his health problems were the result of using his cell phone for work.	Culminating activity	Science argument and language processes	Social
Bell and Linn (2000)	172 (86 pairs) middle school students	Students completed computer explorations and generated and subsequently defended their ideas when presented with two competing theories about how far light goes.	Culminating activity	Science content	Social and 1 material sense (portraying nature's voice)
Berland and Reiser (2009)	53 middle school students in the United States	Students participated in two units of study: *how can I make new stuff from old stuff* and *what will survive*. Students generated scientific explanations (using a claims, evidence, and reasoning structure), articulated their explanations to persuade others, and publicly defended their explanations.	Explanation of phenomenon	Science argument and language processes	Social and 1 material sense (portraying nature's voice)

Trends you are interested in

Other potential columns: **Definition of key terms; Research methods; Measures; Summary of findings**

Cavagnetto, A. R. (2010). Argument to foster scientific literacy: A review of argument interventions in K–12 science contexts. *Review of Educational Research, 80*(3), 336-371.

Step 4. Analyze And Synthesize The Literature

Summarizing Trends in the Reviewed Literature

With the help of the table built in Step 3, you may focus on particular aspects of the reviewed literature, such as:

- ***By publication:*** order your sources by publication chronology and write about the materials according to when they were published.
- ***By trend:*** examine the sources under various trends (e.g., nature of the argument intervention, emphasis of the argument intervention, or aspects of science included in the argument intervention)

The Writing Center at UNC Chapel Hill (n.d.). *Literature reviews.* Retrieved from http://writingcenter.unc.edu/handouts/literature-reviews/

Step 5. Write a Review

Writing Tips and Simple Rules

- ***Find a focus:*** organize around ideas not sources
- ***Use evidence:*** refer to reviewed works when making a point
- ***Be selective:*** select only the most important points to connect to the review's focus
- ***Keep your own voice:*** your own voice should be central to the review despite that it refers to others' ideas and works.
- ***Use caution when paraphrasing:*** be sure to represent the author's information or opinions accurately.
- ***Be critical and consistent:*** discuss the literature critically, identify problems and research gaps instead of stamp collecting.

The Writing Center at UNC Chapel Hill (n.d.). *Literature reviews.* Retrieved from http://writingcenter.unc.edu/handouts/literature-reviews/
Pautasso, M. (2013). Ten simple rules for writing a literature review. *PLOS Computational Biology, 9*(7), 1-4.

Common Problems

Outside Scope:

- Empirical studies
- Essays
- Position papers
- Program overviews

Common Problems

Low Quality:

- Chapter 2 of thesis/dissertation
- Unelaborated or underdeveloped reviews
- Include large tables of reviewed studies but has limited analysis or discussion

Common Problems

Other Problems:

- Plagiarism:
  - Direct quotes from websites or studies without proper citation
  - Self-plagiarism
- Piecemealing
- Duplicate submissions to multiple journals

Thank you!
Q & A

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