Baby Steps to Writing a Critical Literature Review

Richard E. West
EIME Seminar • 02.19.10

"A substantive, thorough, sophisticated literature review is a pre-condition for doing substantive, thorough, sophisticated research."

Boote, D.N. & Beile, P. (2005). Scholars before researchers: On the centrality of the dissertation literature review in research preparation. *Educational Researcher, 34*(6), 3-15.

"However, in education research . . .it is very difficult for us to assume shared knowledge, methodologies, or even commonly agreed-upon problems" (p. 3-4)

By the Numbers ...

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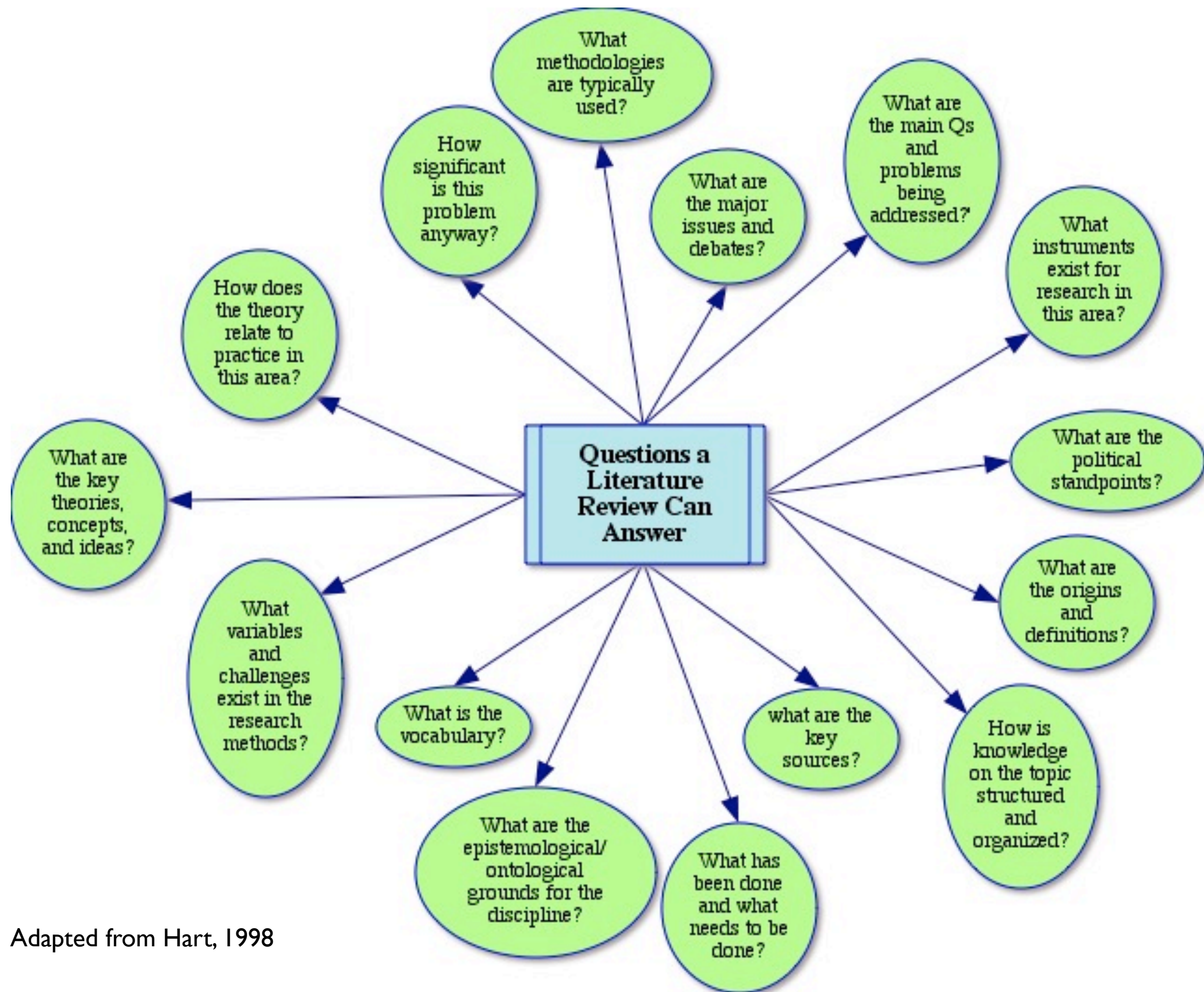
By the Numbers ...

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5. Failure to add to the international literature (20)

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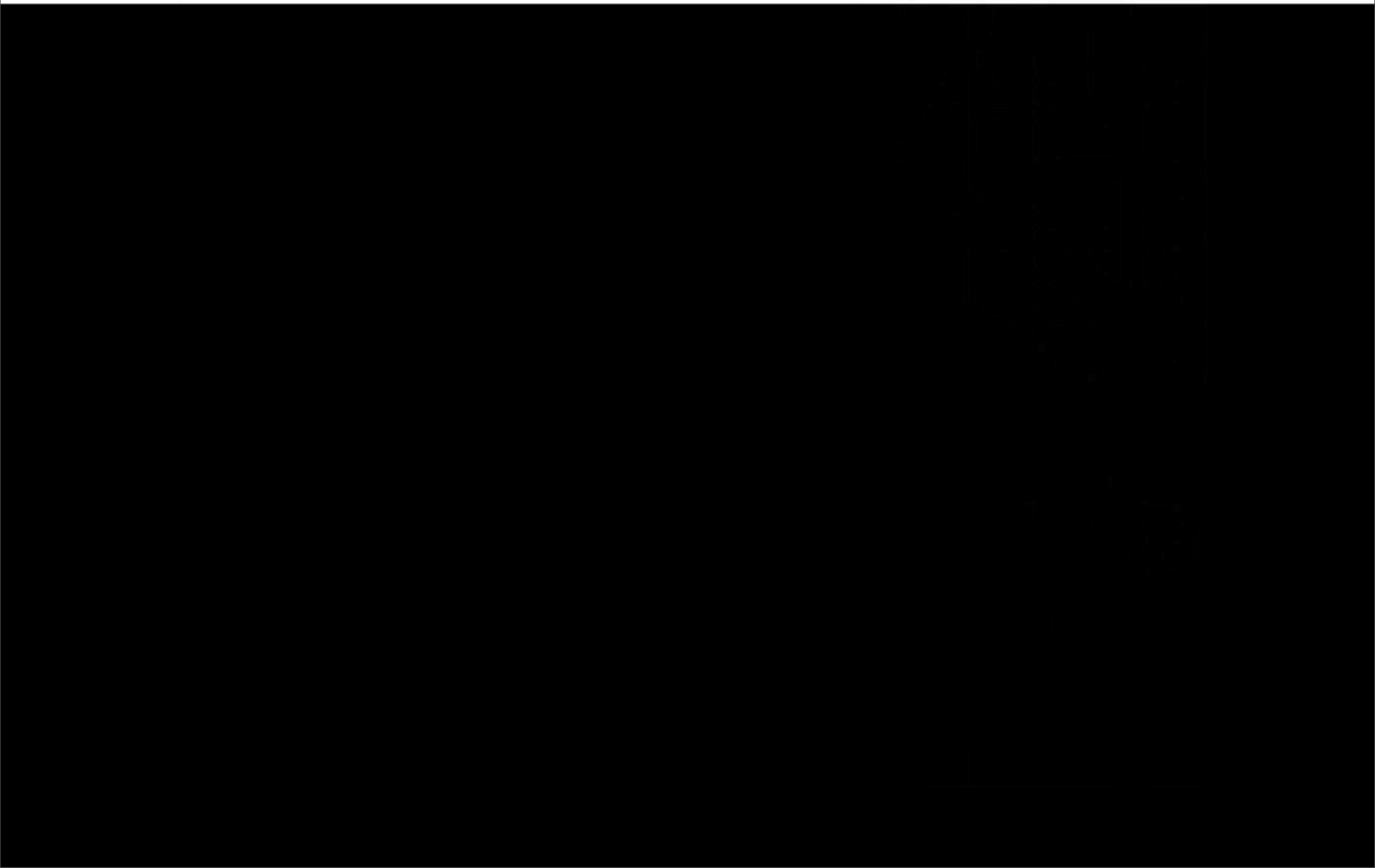| Category	Criterion
1. Coverage	A. *Justified criteria for inclusion and exclusion from review.*
2. Synthesis	B. *Distinguished what has been done in the field from what needs to be done.*
	C. *Placed the topic or problem in the broader scholarly literature*
	D. *Placed the research in the historical context of the field.*
	E. *Acquired and enhanced the subject vocabulary.*
	F. *Articulated important variables and phenomena relevant to the topic.*
	G. *Synthesized and gained a new perspective on the literature.*
3. Methodology	H. *Identified the main methodologies and research techniques that have been used in the field, and their advantages and disadvantages.*
	I. *Related ideas and theories in the field to research methodologies.*
4. Significance	J. *Rationalized the practical significance of the research problem.*
	K. *Rationalized the scholarly significance of the research problem.*
5. Rhetoric	L. *Was written with a coherent, clear structure that supported the review.*

"It is productive insight that distinguishes a synthetic review . . . from the plodding research summaries that characterize most dissertations." (p. 11)

Questions a Literature Review Can Answer

- What methodologies are typically used?
- How significant is this problem anyway?
- What are the major issues and debates?
- What are the main Qs and problems being addressed?
- What instruments exist for research in this area?
- How does the theory relate to practice in this area?
- What are the key theories, concepts, and ideas?
- What variables and challenges exist in the research methods?
- What is the vocabulary?
- What are the epistemological/ontological grounds for the discipline?
- What has been done and what needs to be done?
- what are the key sources?
- How is knowledge on the topic structured and organized?
- What are the origins and definitions?
- What are the political standpoints?

Adapted from Hart, 1998

Saturday, February 20, 2010

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The 6 Baby Steps

Problem Formulation

Literature Searching

Literature Evaluation & Summarizing

Analysis & Interpretation

Writing & Structuring

Publishing & Presenting

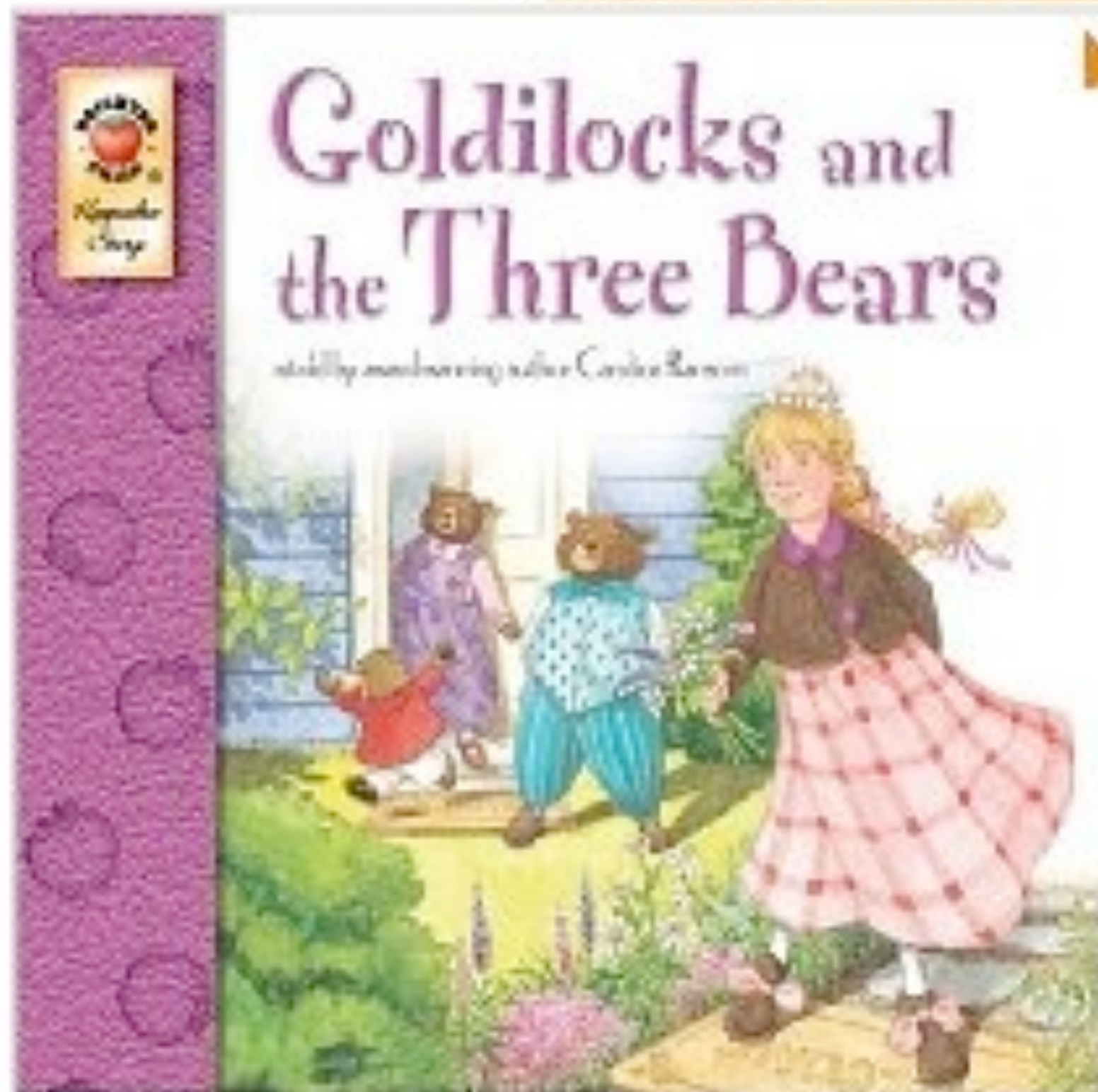Adapted from Cooper's (1998) 5 stages for writing literature reviews

Problem Formulation
(Charting the Course)

Step 1

What's your direction? Goals? Purpose?

Goldilocks and the Three Bears

retold by and drawn by ... Caroline Rowan

Targeting Journals: Know your Audience

WHO MAKES IT INTO THE EXCLUSIVE CLUB?

- What specific topic are you reviewing?

- For what purpose? What do you hope to learn?

- What is your scope? (what will be included?)

- What definitions?

- What methods?

- What time frame?

- What level of quality?
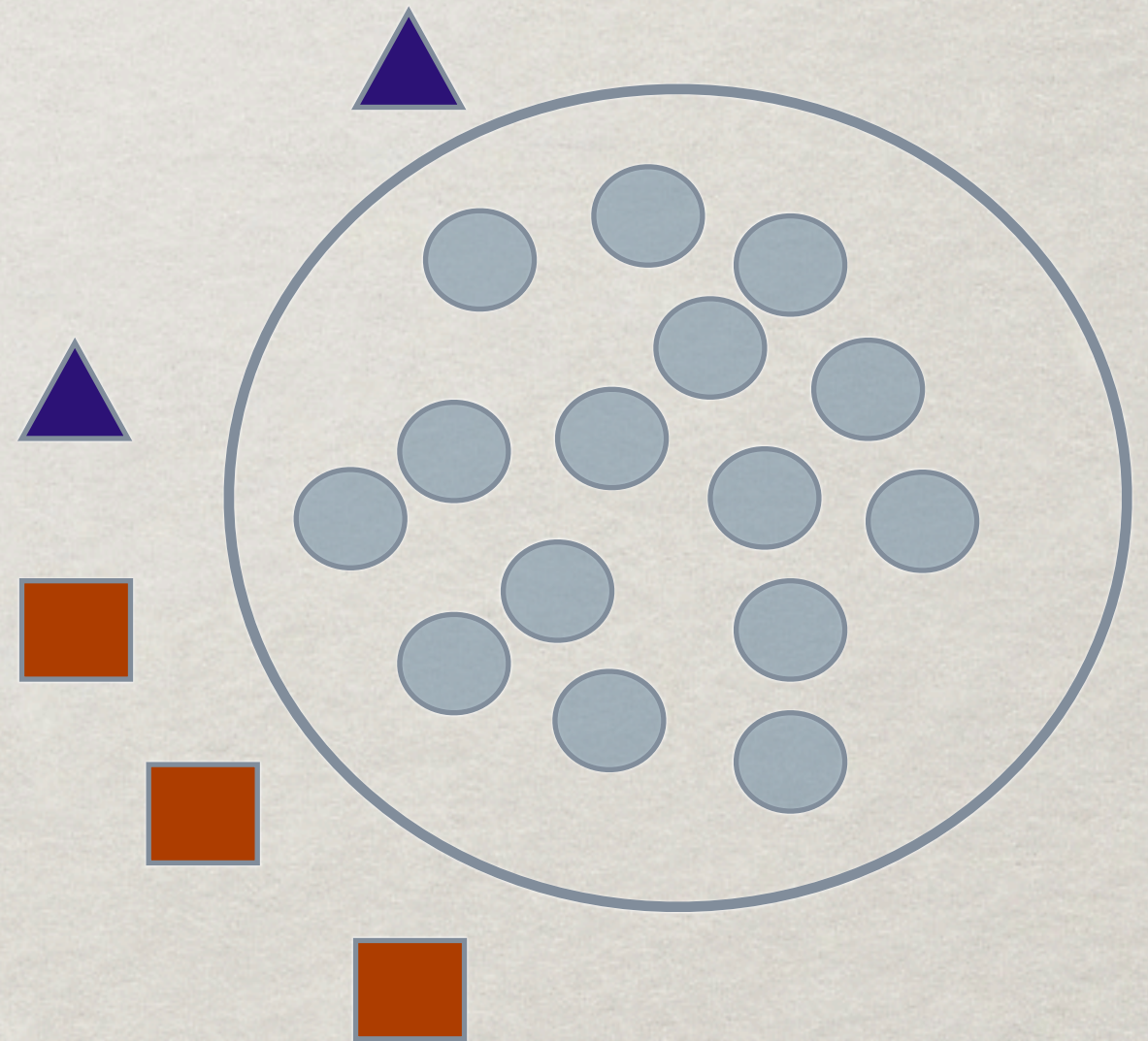
Checkpoint 1: Problem Statement

Literature Searching (Step 2)

Strategies for being LESS messy

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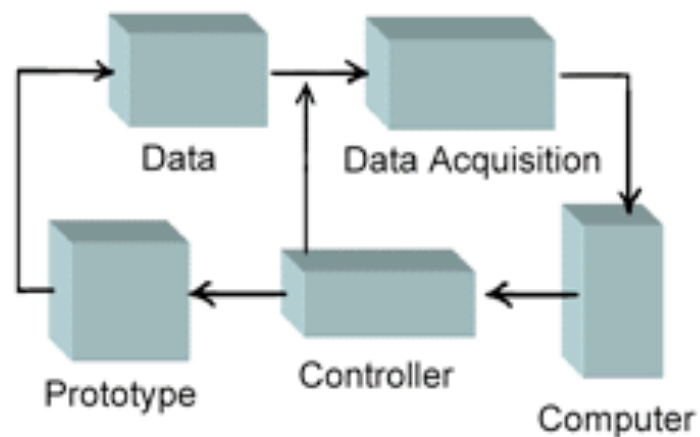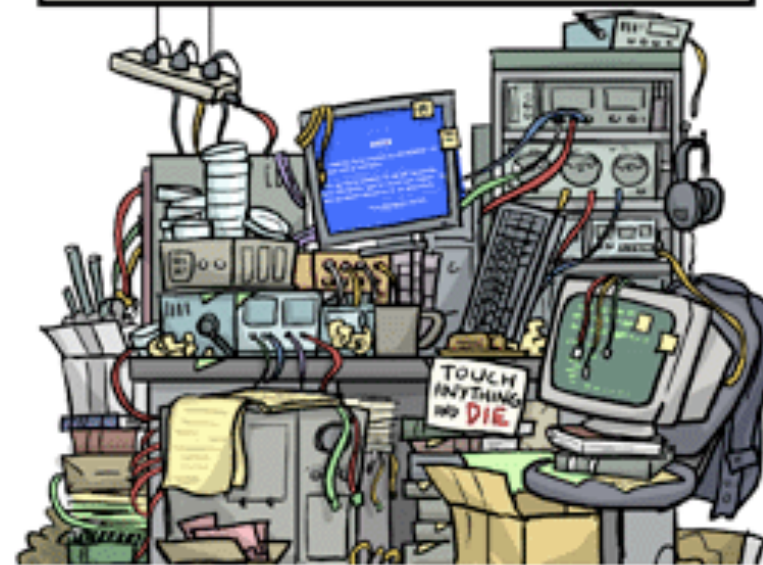
PHD Comics available at http://www.phdcomics.com/

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- Know when to skim & when to dive

- Learn how to read faster

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  - Note relevance to your project

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- Evaluate reference list for currency and coverage

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I CAN SEE WHERE THIS IS GOING

Lit Review Methods

Lit Review Methods

"If our objective is to analyze and then evaluate an argument, we need some clear methods for doing so. Whatever method we use, it needs to be clear, consistent and systematic." — Hart, p. 87

Possible Inclusion Criteria

Consider:

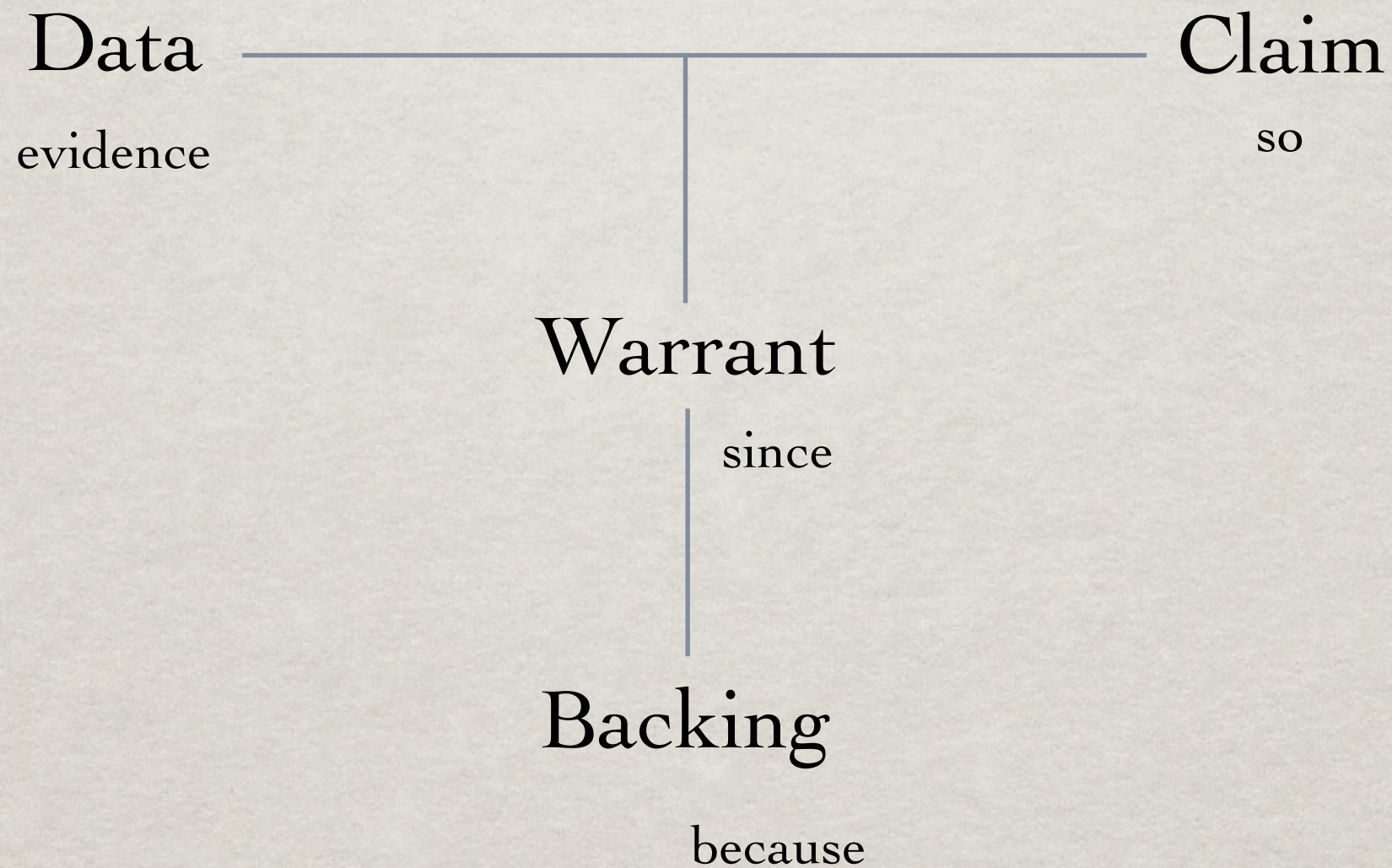- The purpose of your review

- Definitions

- Context

- Timeliness

Checkpoint 2: Methods Section

Example from Moos & Azevedo

Article Summarizing & Critiquing

Step 3

Critiquing

Data — Claim

evidence   so

Warrant

since

Backing

because

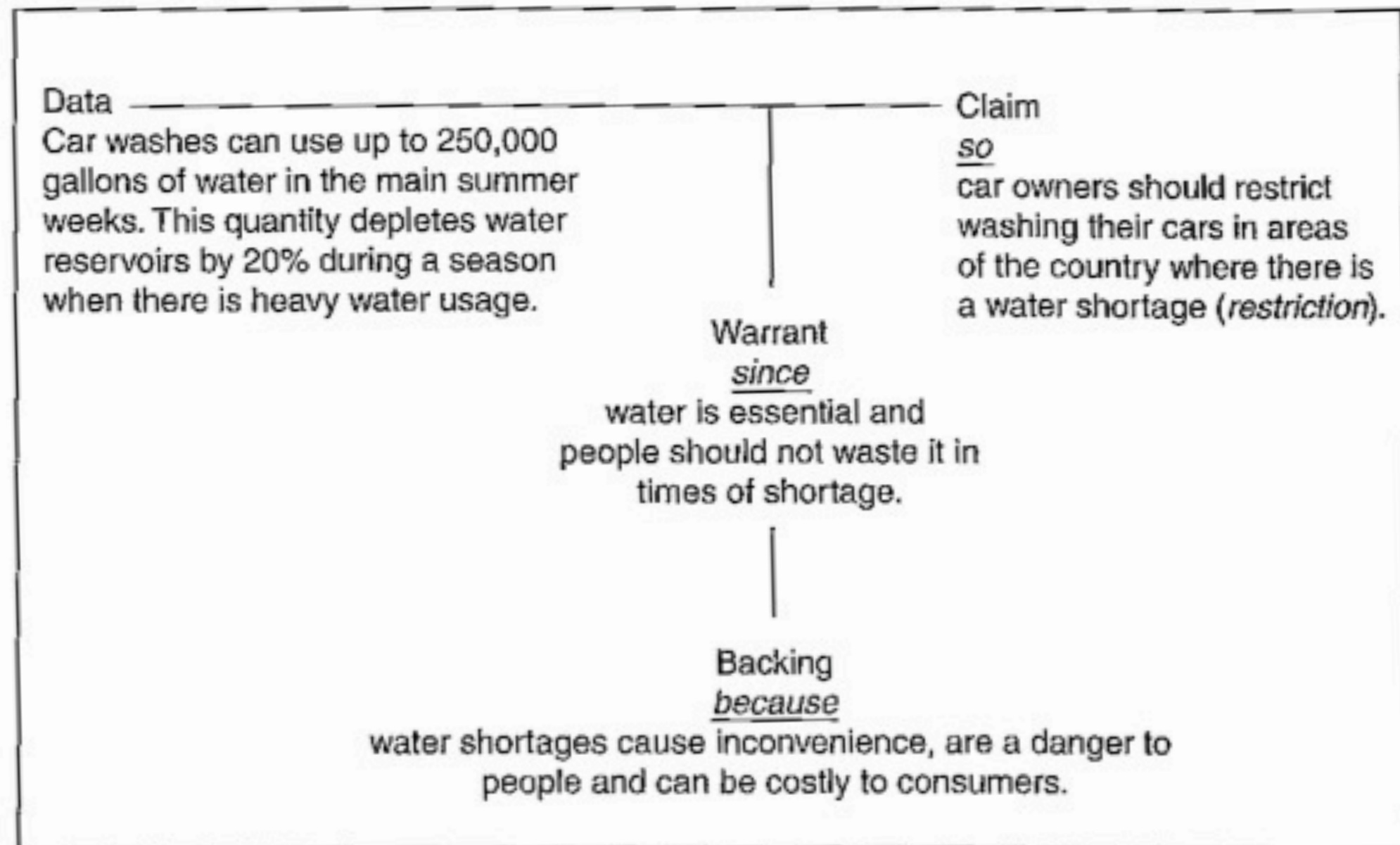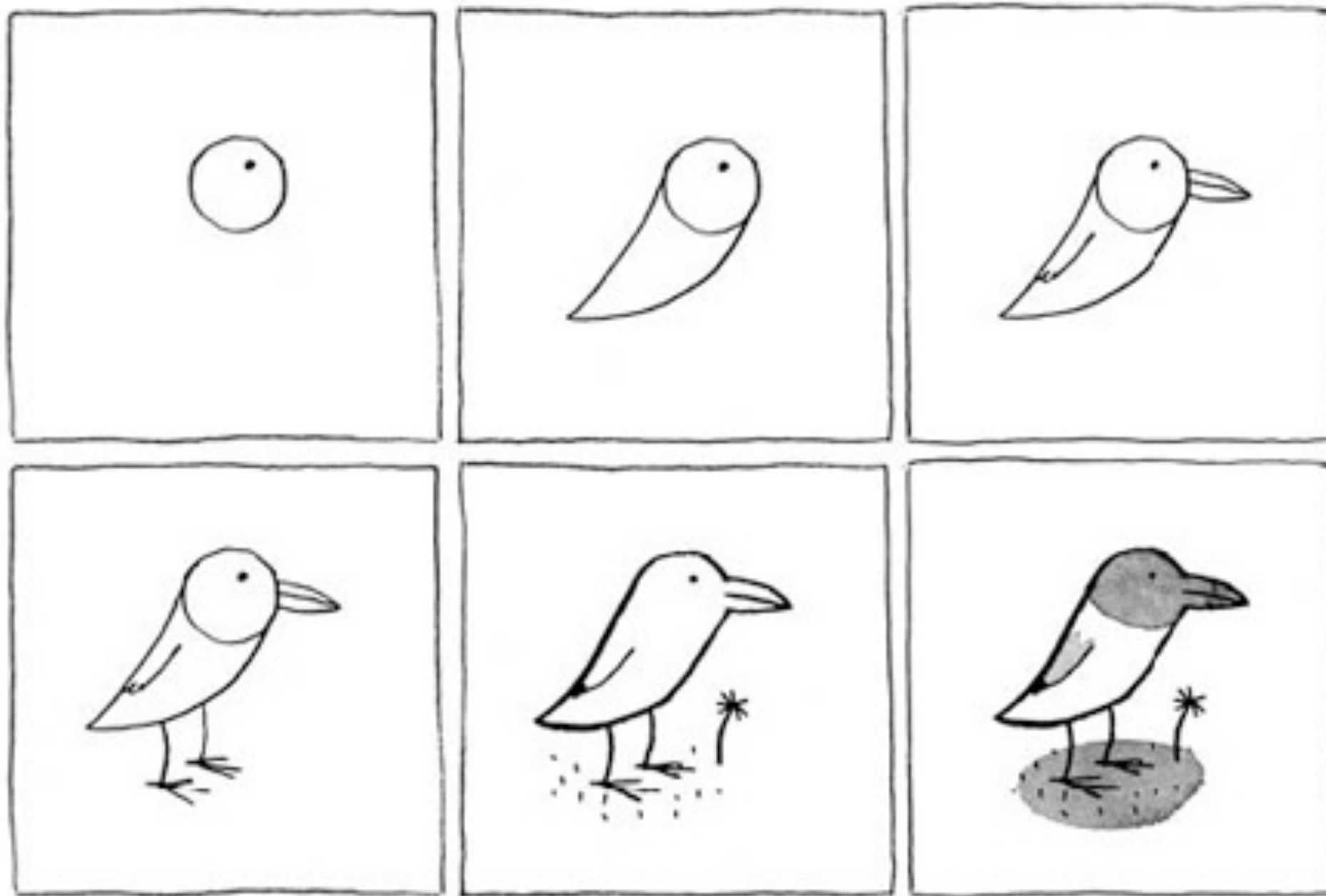*Adapted from Stephen Toulmin, 1958, quoted in Hart, pp. 87-93*

Figure 4.2 An argument for saving water

From Hart, pp. 87-93

Art by Michelle Kempner - http://blog.craftzine.com/archive/2008/06/learn_to_draw_comic_characters.html

Summarizing Example

Sample

Context

Question

Method

Results

MacGregor (1999) videotaped 7th and 11th graders while they used a commercially produced instructional hypermedia system to learn about 12 biodomes (e.g., tundra, desert, temperate deciduous forest). The focus of this study was to investigate the relationship between students' computer self-efficacy and their navigation in this hypermedia learning environment. Students' navigations were grouped into three categories: concept connector, sequential studier, or video viewer. The students were characterized as being concept connector navigators if they demonstrated need for further examples by cross-linking to other related nodes of information. Sequential studiers were described as students who accessed objects on the screen in a sequential order, typically from left to right or top to bottom. Students who were typified as being video viewers demonstrated a primary interest in videos. Results indicate that there is substantial variability in how students use hypermedia. In particular, students with higher levels of self-efficacy tended to structure their navigation in a more purposeful manner because they made nonsequential connections of nodes (concept connectors). On the other hand, students with lower self-efficacy tended to be characterized as sequential studiers, due to their sequential navigation of the hypermedia environment.

Checkpoint 3: Annotated Bibliography

Analyzing/Interpreting
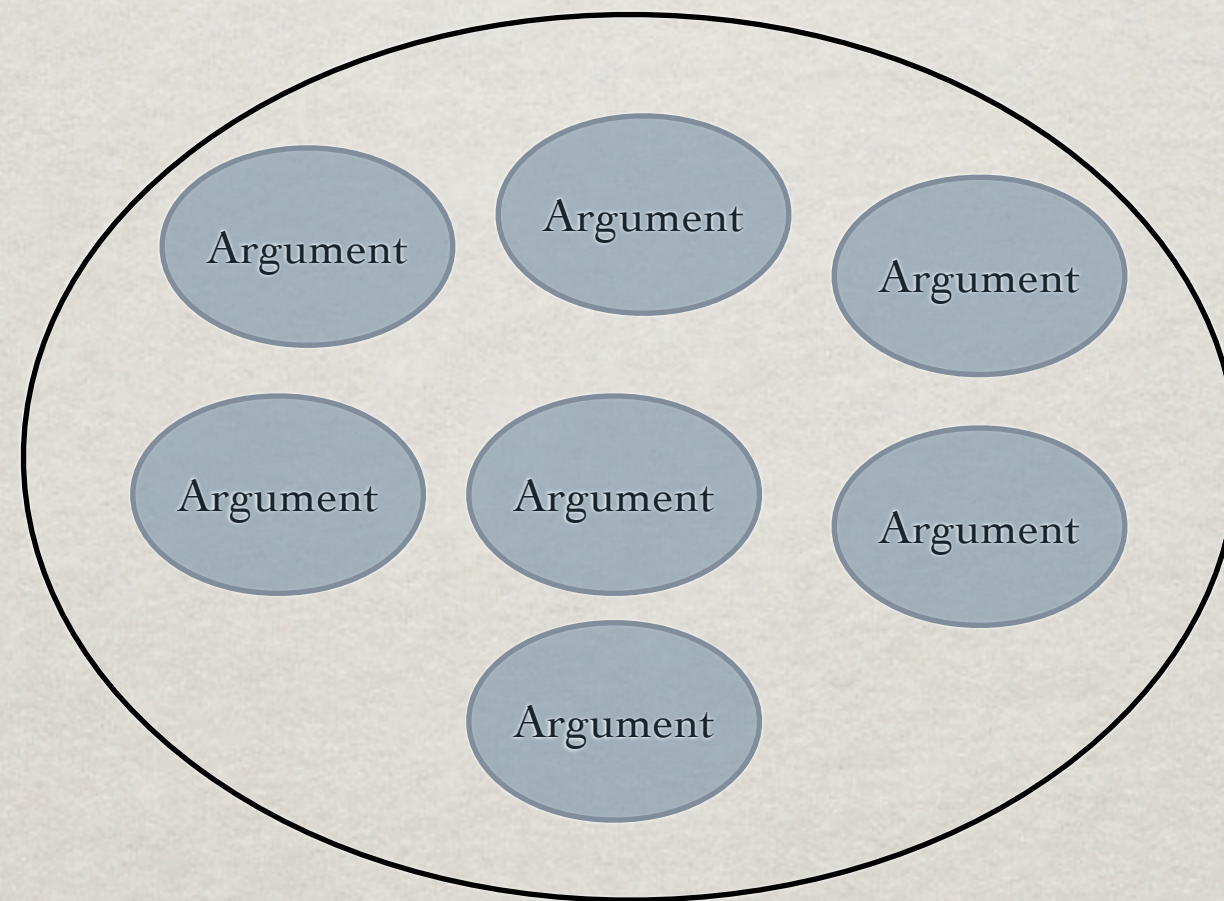## (Step 4)

Calvin & Hobbes by Bill Watterson

Interpretation is . . .

- The "So What?" principle (Elder Boyd K. Packer)

- "What does it all mean?"

- "How would I group this information into piles?"

- It's the contribution the literature review makes to the research base to provide direction for the future

Don't Just Critique!

Levels of Interpretation

Over-arching Analysis

Organizing Structure

* Chronological

* Philosophical

* Theoretical

* Methodological

* Definition comparison

* Meta-analyses

* Point, counterpoint

* Model comparison

Visualizing Data

Can you organize your interpretation of the literature into a ...

Table?

Table 1 Summary of conceptual change models

The model	Authors	Characteristics	
		Strengths	**Weaknesses**
Theory of conceptual change	Posner et al. (1982)	Identified key cognition factors contributing to conceptual change in students' learning	Lack of focus on the role of instructors in students' conceptual change learning process
Revisionist theory of conceptual change	Strike & Posner (1992)	Added affective factors (e.g., motivation) as contributing factors to students' conceptual change learning process	Still lack of focus on the role of instructors in students' conceptual change learning process
Teaching for conceptual change	Hewson et al. (1998)	Recognized the significant role of the instructor's teaching in students' conceptual change learning process	Lack of attention to the dynamic relationship between teaching and learning
Processes of change	Merenluoto and Lehtinen (2004)	Recognized the different paths that students may take based on their different cognitive, metacognitive, and motivational sensitivity to the task	Lack of attention to the impact of the instructor's teaching on the paths that students may take

Song, L.; Hannafin, M.; & Hill, J. (2007). Reconciling beliefs and practices in teaching and learning. *Educational Technology, Research, and Development.* 55(1): 27-50.
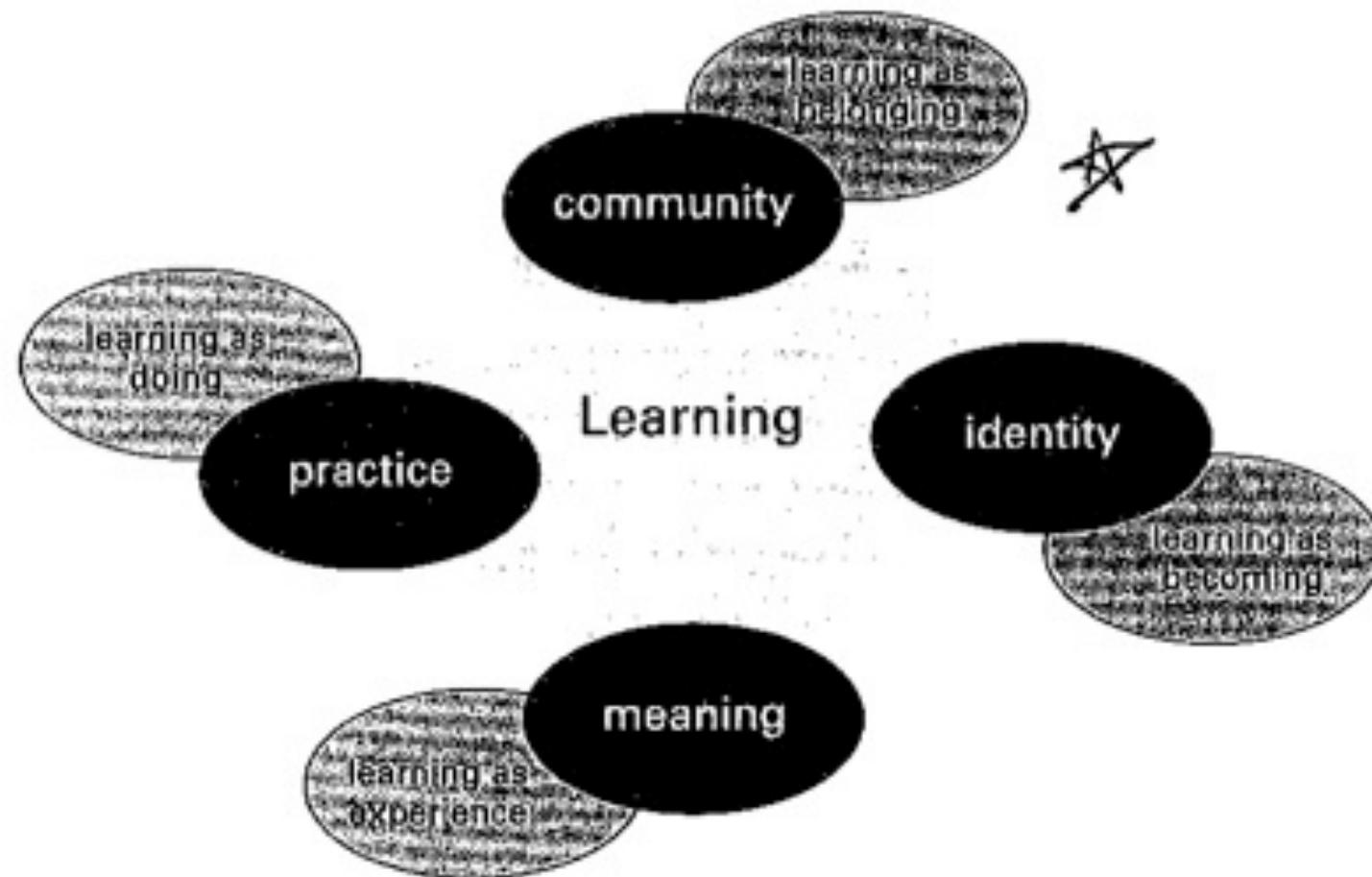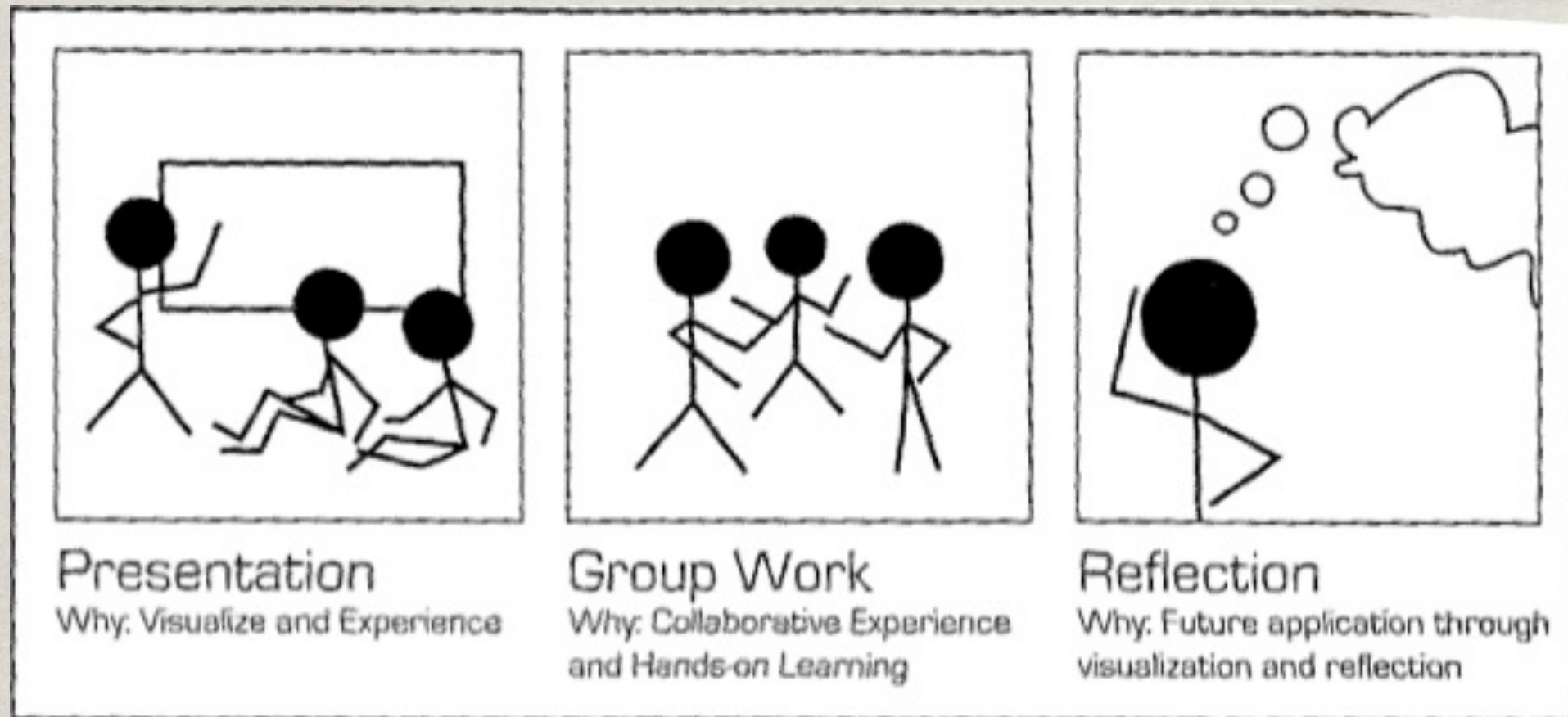
Figure?

Figure 0.1. Components of a social theory of learning: an initial inventory.

Wenter, E. (1998). *Communities of Practice.* Cambridge: Cambridge University Press

Drawing?

West, R. E. (2005). Master's Thesis.

Something Else?

Checkpoint 4: Extended Outline & Visual

Writing & Revising

Step 5

Making Writing a Habit

Adapted from J. Amos Hatch (2002) *Doing Qualitative Research in Educational Settings*

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* Embrace imperfection, and just write

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- Quit at a good place

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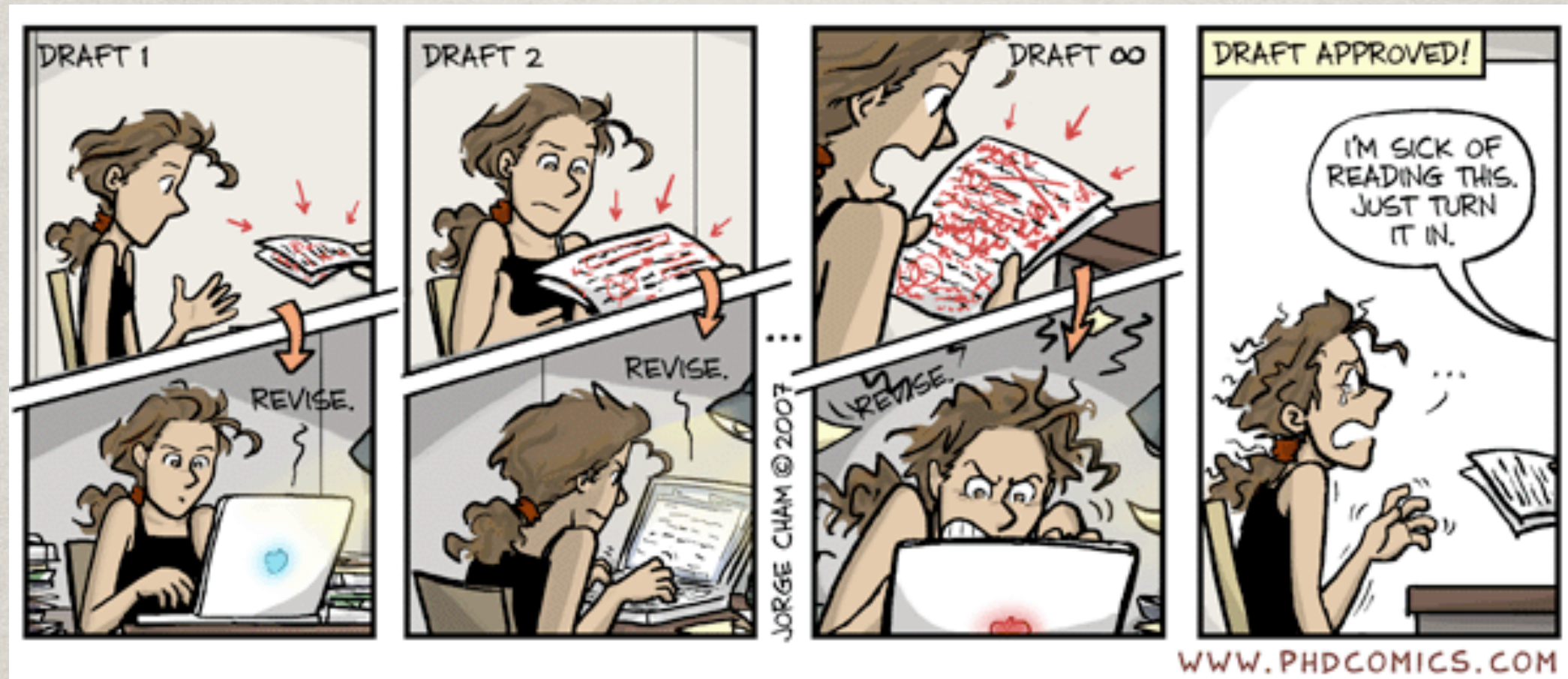* Quit at a good place

* Read like a writer, and write like a reader

Stuart Johnson, Deseret News, Oct. 6, 2009

❋ Remember the "Jonathan Tavernari Principle"

Work through the droughts, go with the runs

Revising

3 Levels of Review

🌑 Non-expert

🌑 Expert from your field

🌑 Expert from this specific area

Tara Gray, (2005). Publish & Flourish: Become a Prolific Scholar.
Las Cruces, NM: New Mexico State University

Checkpoint 5: Deadlines for Article Drafts

Presenting & Publishing

Step 6

A Little Parable ...

"Being a writer, he is quite naturally curious about Heaven and Hell. So upon meeting Saint Peter at the pearly gates, he asks if it would be possible to visit Hell briefly before ascending to Heaven. Saint Peter, obliging as ever, is happy to grant the writer's request. In a flash, they arrive in writer's Hell where they feast their eyes upon thousands of writers planted in front of thousands of typewriters, arranged in rows as far as the eye could see, a damp, dark, foul place, full of the overpowering stench of decomposition and putrefaction. "Just as I expected," says the writer to Saint Peter. "I'm ready to see Heaven now."

In a flash, they arrive in writer's Heaven where they feast their eyes upon thousands of writers planted in front of thousands of typewriters, arranged in rows as far as the eye could see, a damp, dark, foul place, full of the overpowering stench of decomposition and putrefaction. "But this is the same as Hell," the writer objects."

Not at all," says Saint Peter. "Their work is published."

— Heimpel, 1999

- A Good Literature Review is organized around a coherent set of questions.
  - A Poor Literature Review rambles from topic to topic without a clear focus.

- A Good Literature Review includes the major landmark studies
  - A Poor Literature Review omits these or mixes them with trivial studies without making distinctions about quality or relevance.

- A Good Literature Review critically evaluates the quality of the research according to clear criteria.
  - A Poor Literature Review simply summarizes research findings.

- A Good Literature Review uses quotes, illustrations, graphs, and/or tables to present and justify the critical analysis of the literature.
  - A Poor Literature Review lists studies without presenting critical evidence.

- A Good Literature Review takes the form of a logical argument that concludes with a clear rationale for additional research.
  - A Poor Literature Review fails to build a clear rationale.

- A Good Literature Review is interesting to read because it is clear, coherent, and systematic in its organization and presentation.
  - A Poor Literature Review is boring or obtuse.

- A Good Literature Review presents research evidence in a meaningful order.
  - A Poor Literature Review mixes studies without acknowledging chronological developments.

Just Remember ...

Slides will be posted on http://byuipt.net/wests/rick/presenting

Additional Sources

* Cooper, H. (1998). Synthesizing research: A guide for literature reviews. Thousand Oaks: Sage.

* Pan, M. L. (2008). *Preparing literature reviews: Qualitative and quantitative approaches* (3rd Ed.). Glendale, CA: Pyrczak Publishing.

* Galvan, J. L. (2009). Writing Literature Reviews. Glendale, CA: Pryczak. (chapters 10 & 14).

* Heimpel. (2005). Legitimizing Electronic Scholarly Publication: A Discursive Proposal. (2005, August 31). *Text.Serial.Journal*. Retrieved January 9, 2010, from http://journals.sfu.ca/chwp/index.php/chwp/article/viewArticle/A.15

* Hart, C. (1998). Doing a literature review: Releasing the social science research imagination. Thousand Oaks, CA: Sage.