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CRITICAL THINKING STRATEGIES FOR GRADUATE ASSIGNMENTS

FACULTY OF GRADUATE STUDIES
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Focused on the future of learning.

Agenda

- Roundtable on your perspective

- Working definition of Critical Thinking

- Education perspective

- Information Literacy/Research perspective

- Writing perspective

- Visual organization tips

- Discussion & Reflections

Intended Learning Outcomes

- Provide a working definition of "critical thinking"

- Provide a context in which to discuss strategies that support students' critical thinking skills for graduate assignments

- Raise awareness on multiple perspectives on critical thinking

- Reflect on strategies to facilitate the use of critical thinking skills for assignments

Your perspective…

- In your discipline/experience as an AU student, what do you understand critical thinking to be?

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Poll/survey question

- The following statements are all different dimensions of critical thinking. Which one do you feel is your weakest area?
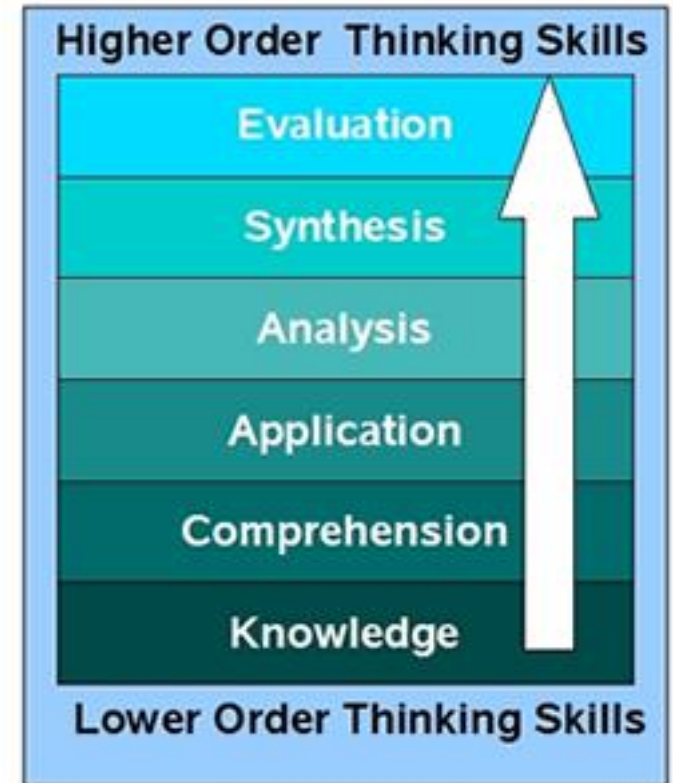
Working Definition of Critical Thinking

- Critical thinking is a developmental and dynamic mental process which incorporates acts of planning, analysis, evaluation and reflection in applying a set of criteria to solve a problem or answer a question.
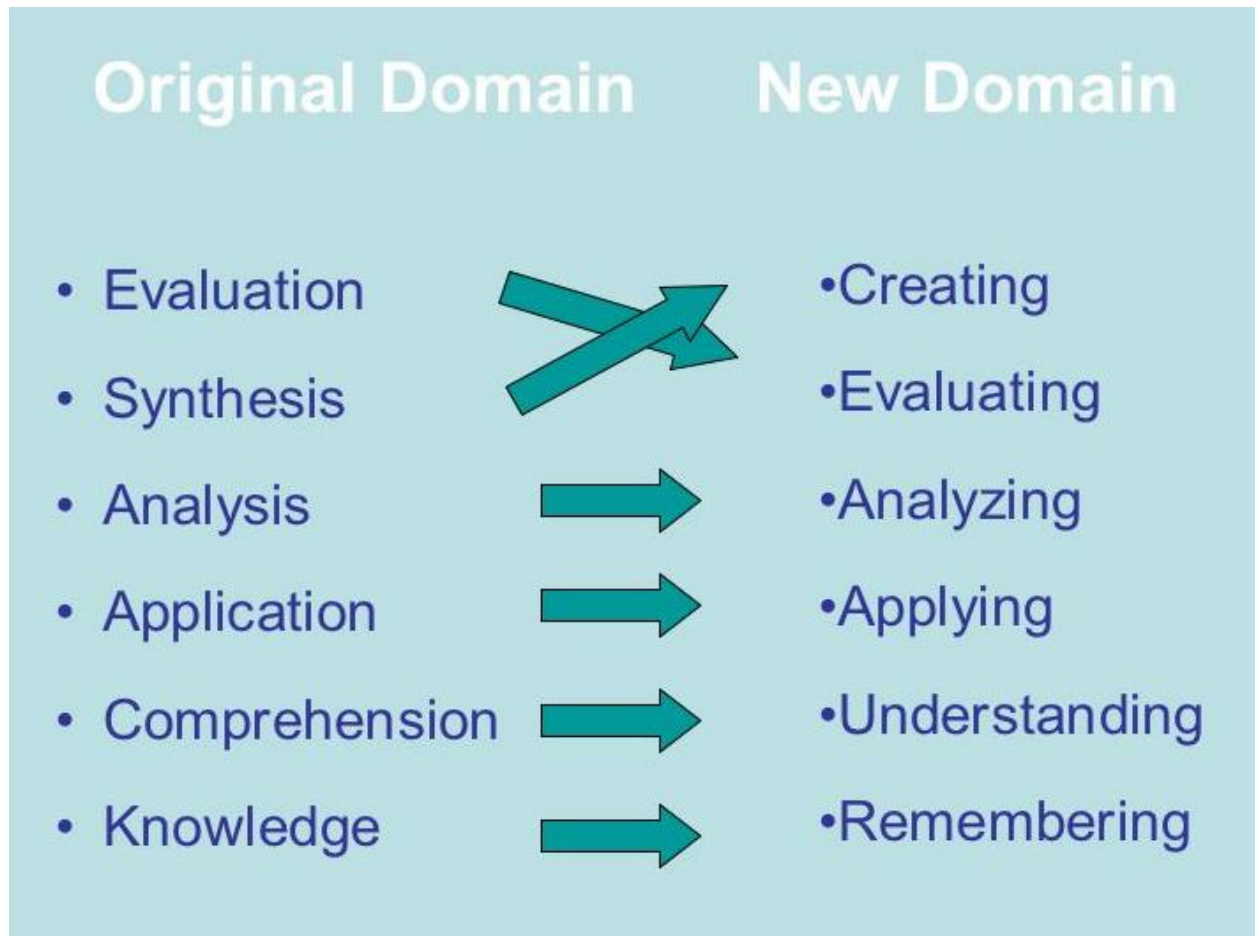
Van Gyn &Ford (2006)

Critical thinking is

- A quality of thinking that is characterized by self-regulated deliberations on a challenge situation or task that involve exploring and generating alternatives, and making evaluative judgments. These judgments are based on criteria, which provide justifications for the conclusion, and are applied to meaning, relational, empirical, or value claims (p.11)

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Education Perspective

Bloom's Revised Taxonomy

Original Domain	New Domain
• Evaluation	•Creating
• Synthesis	•Evaluating
• Analysis	•Analyzing
• Application	•Applying
• Comprehension	•Understanding
• Knowledge	•Remembering

http://www.nwlink.com/~donclark/hrd/bloom.html
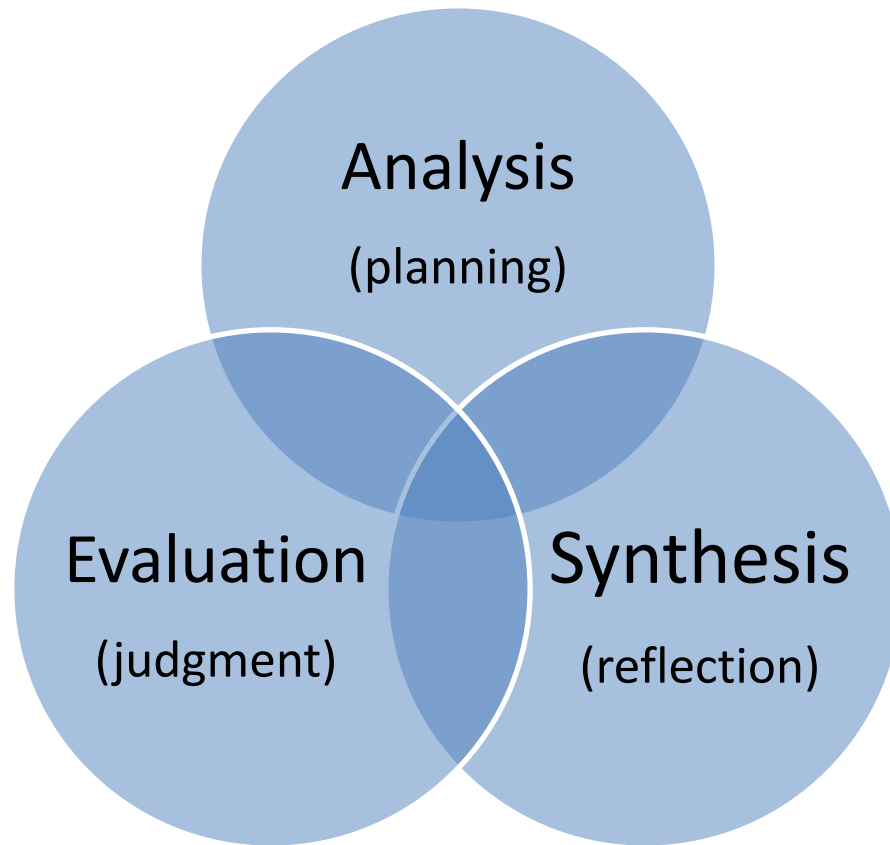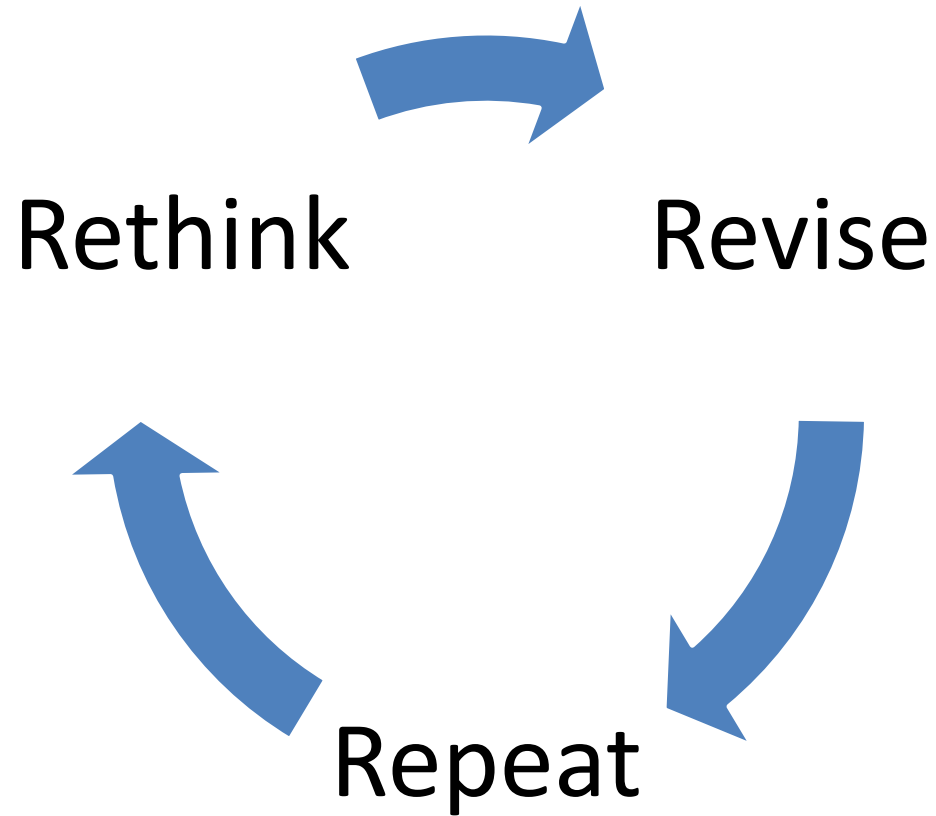
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Information Literacy Perspective

- Information literacy is the ability to:
  - Determine the extent of information needed
  - Access the needed information effectively and efficiently
  - Evaluate information and its sources critically
  - Incorporate selected information into one's knowledge base
  - Use information effectively to accomplish a specific purpose
  - Understand the economic, legal and social issues surrounding the use of information, and access and use information ethically and legally

    (Association of College & Research Libraries, 2000, 2-3)

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Thinking Critically About the Research Process

Analysis (planning)

Evaluation (judgment)

Synthesis (reflection)

Rethink   Revise

Repeat

Self-Reflection on the Research Process

- How do you normally approach a research assignment?

- What strategies work or don't work?

Thinking Critically About the Research Process

- Strategies for Understanding Assignments

- Research Journal

- Pose Questions

- Taking Notes

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Strategies for Understanding Assignments

- What are the key concepts?

- What is your topic really about?

- Restate the research topic in your own words

- Rephrase your topic as a question

- What other words can be used to describe the concepts in your topic?

Sample Research Journal

Search Terms			
Concept 1	**Concept 2**	**Concept 3**	
Treating	Children	Autism	
treatment	Child	Autistic	
cure	youth		
therapy	infants		
rehabilitation	kids		
Search Strategies			
1 treating and children and autism			
2 (Treatment or therapy) and (children or infants) and autism			
3 (treatment or cure or rehabilitation) and (child* or youth or kids) and (autism or autistic)			
Databases Searched	**Search Strategy Used**	**# of Results Retrieved**	**Comments**
PsycARTICLES	1	1674	Large number of results, need to narrow search, results do not seem to be specific enough

Evaluating a Search

- What do I consider a "successful search"?
  - Relevant results on my topic
  - Recent results
  - Appropriate number of peer reviewed sources
  - Results from experts in the field

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Evaluating a Search

- How many results were retrieved? Many? Few? What does that mean? (Good/bad search?)

- What types of results were retrieved? Scholarly, peer reviewed, magazines?

- How recent are the results?

- Do any results appear (at first glance) to be relevant?

Evaluating Resources

- Does the resource answer your question or help you to understand it better?

- Does the resource support your point of view?

- Does the resource cover the right time period?

- Is the resource appropriate to your level?

- Does the resource meet the publication date range specified in your assignment?

- Is the resource scholarly or peer reviewed and does it match the requirements of your assignment?

- Does the author of the item appear to be an authority on the topic?

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Reading Critically

- What problem or issue is the author addressing?
- Is the problem or issue clearly identified?
- How does the author make their argument (e.g. by appealing to emotion, objectively etc.)
- Is their bias in the argument and what is it?
- How is the argument laid out or structured?
- What contributions does the item make to your specific information need?
- How does this document relate to other literature you have read?

Taking Notes

- Make note of the complete citation!

- Identify where you found the item (e.g. name of specific journal database, AU Library Catalogue, Web, etc.)

- Develop a strategy for identifying your own thoughts in your notes

- If you are capturing important quotes, mark them as such and include the page number

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Taking Notes

- What strategies do you use?

Critical Thinking from an Academic Writing Perspective

- A developmental and dynamic mental process, with parallels to the academic writing process, built on intellectual habits of mind,

- characterized by acts of judgment, planning, deliberating, justifying, challenging and self-correcting,

- and aimed at applying a set of criteria to solve a problem or answer a question.

(Paul & Elder, 2005; Toulmin in Golden, Berquist & Coleman, 1998; Van Gyn & Ford, 2006)

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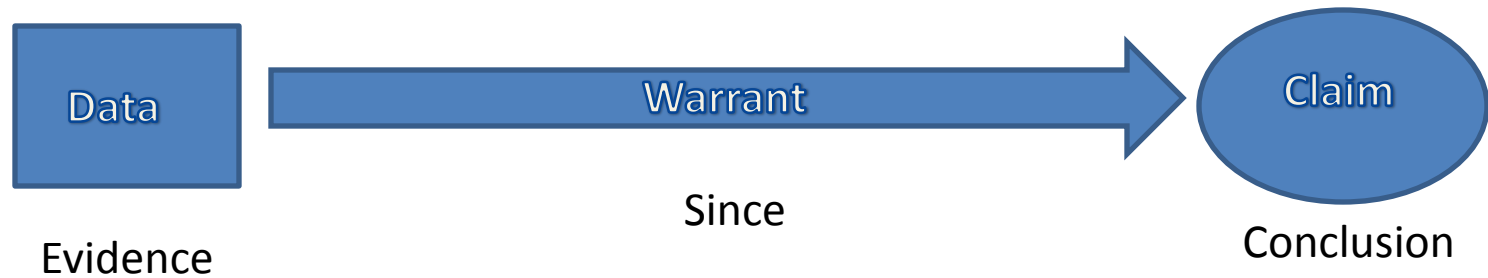# Critical Thinking from an Academic Writing Perspective

- ## The act of <u>challenging assumptions</u> and coming to conclusions through <u>systematic inquiry</u>

(Paul & Elder, 2005; Toulmin in Golden, Berquist & Coleman, 1998; Van Gyn & Ford, 2006)

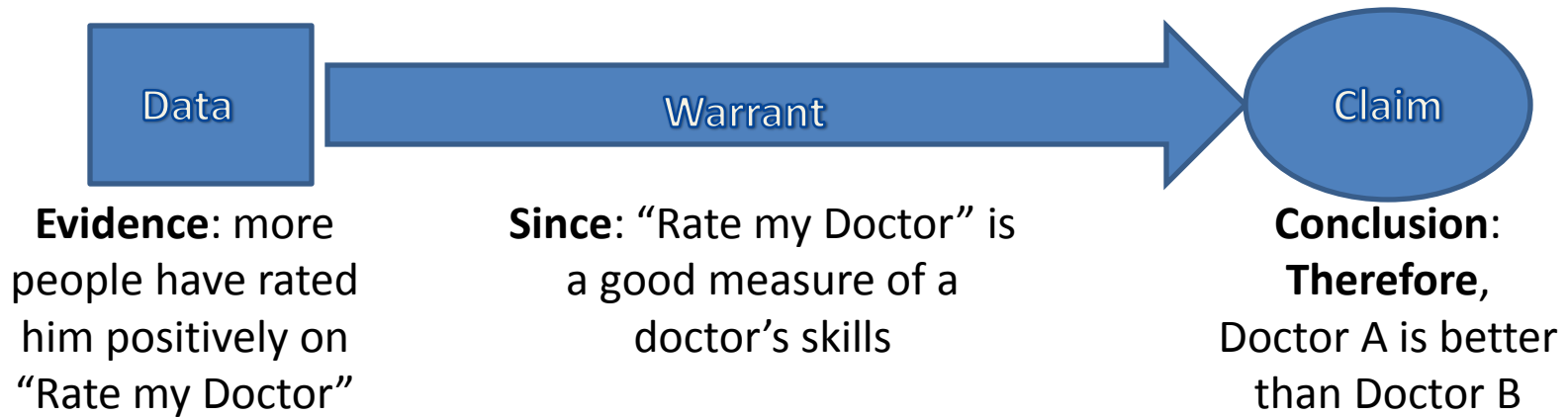# The Critical Thinking/Academic Writing Connection

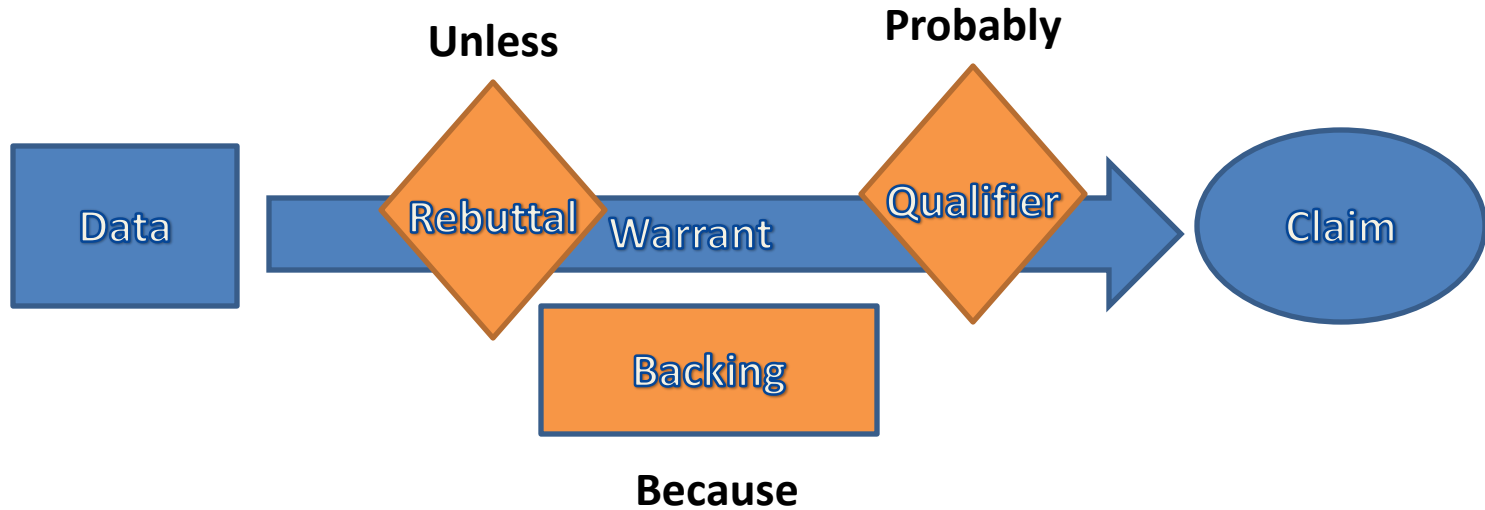Stephen Toulmin's rhetorical model: one way to a clear thesis

Data

Warrant → Claim

Evidence

Since

Conclusion

(Golden, Berquist &Coleman, 1989)

The Critical Thinking/Academic Writing Connection

Stephen Toulmin's Model of Argument

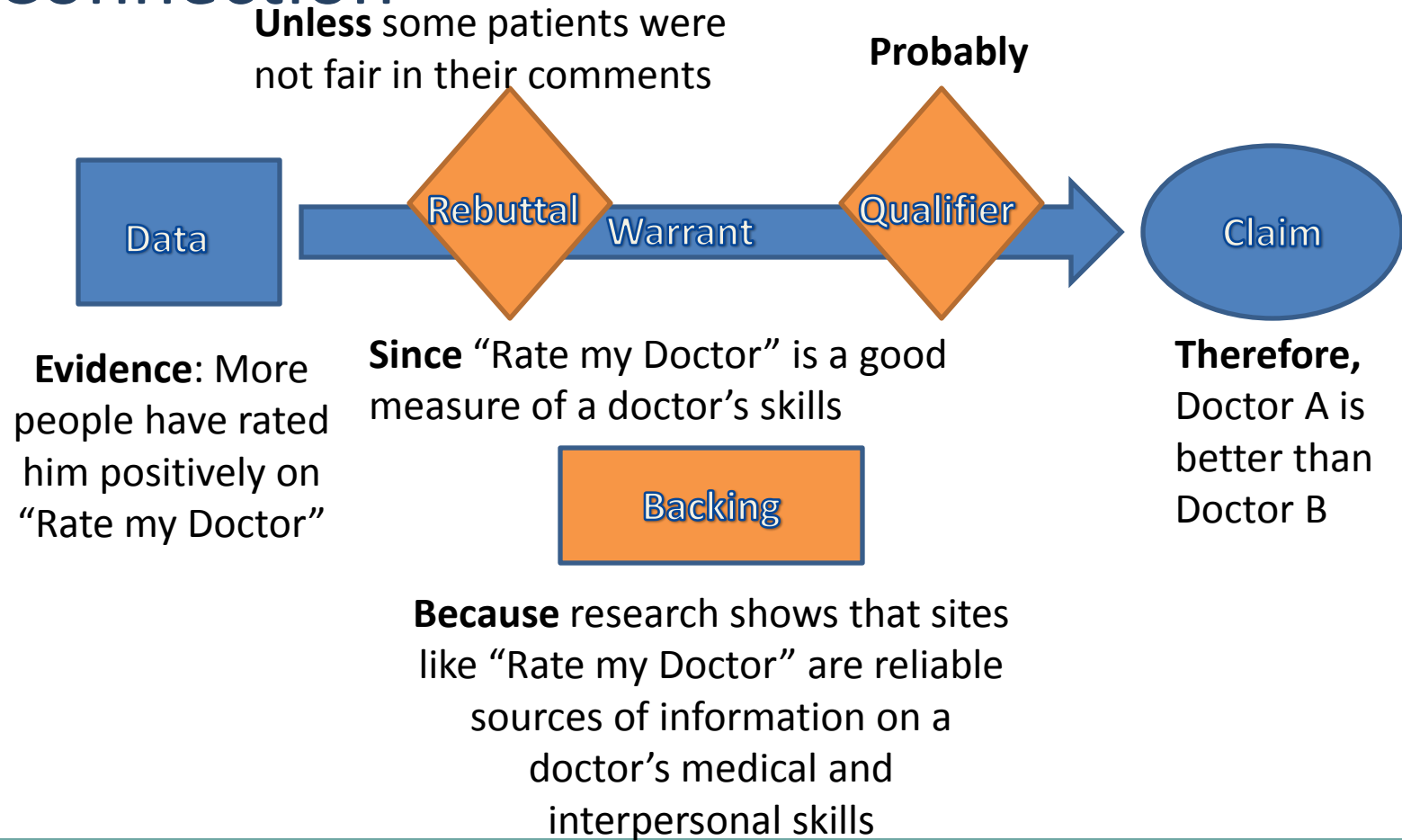**Evidence**: more people have rated him positively on "Rate my Doctor"

Since: "Rate my Doctor" is a good measure of a doctor's skills

Conclusion: **Therefore**, Doctor A is better than Doctor B

The Critical Thinking/Academic Writing Connection

Unless **Probably**

Data → Rebuttal → Warrant → Qualifier → Claim

Backing

Because

(Golden, Berquist &Coleman, 1989)

The Critical Thinking/Academic Writing Connection

Unless some patients were not fair in their comments

Probably

Data

Rebuttal

Warrant

Qualifier

Claim

Evidence: More people have rated him positively on "Rate my Doctor"

Since "Rate my Doctor" is a good measure of a doctor's skills

Backing

Therefore, Doctor A is better than Doctor B

Because research shows that sites like "Rate my Doctor" are reliable sources of information on a doctor's medical and interpersonal skills

The Critical Thinking/Academic Writing Connection

Dr. A is **probably** a better physician than Dr. B **because** he was rated more highly on "Rate my Doctor" (**unless** some patients were not fair in their remarks about Dr. B) **since** "Rate my Doctor is a good source of information about a doctor's skills **because** research shows that sites like "Rate my Doctor" provide a reliable reflection of a doctor's medical and interpersonal skills.

# Critical Thinking and Academic Writing Processes

Planning/Prewriting
- Asking good questions/Pre-reading
- Identifying biases/underlying assumptions/Identifying key questions
- Identifying problems/issues/questions/

Deliberating/Outlining
- Analyzing and synthesizing ideas
- Drawing original conclusions/
- Formulating a thesis
- Outlining and organizing the text

Justifying/First Draft
- Offering good evidence/ Refining the thesis
- Testing reasons
- Testing conclusions/ Organizing the text

Challenging/Second Draft
- Critically evaluating sources
- Selecting criteria for evaluation
- Asking good questions of the material
- Revising for content/arrangement

Self –Correcting/Final Draft
- Reflecting on the quality of CT
- Refining the thesis
- Assessing the argument
- Tightening the logic/flow
- Editing for grammar/meaning

Adapted from "Critical Thinking Competency Standards: Standards, Principles, Performance Indicators, and Outcomes with a Critical Thinking Master Rubric" by R. Paul and L. Elder, p. 20-55. Copyright 2005 by Foundation for Critical Thinking.

The Critical Thinking/Academic Writing Connection

- "Although we can think without expressing our ideas, we cannot write well without thinking…[Thinking] provide[s] the substance of composition" (Ruggierio,1998, p.233).

- Characteristics of substantive composition:
  - Unity
  - Coherence
  - Emphasis
  - Development

Substantive writing through paragraphing
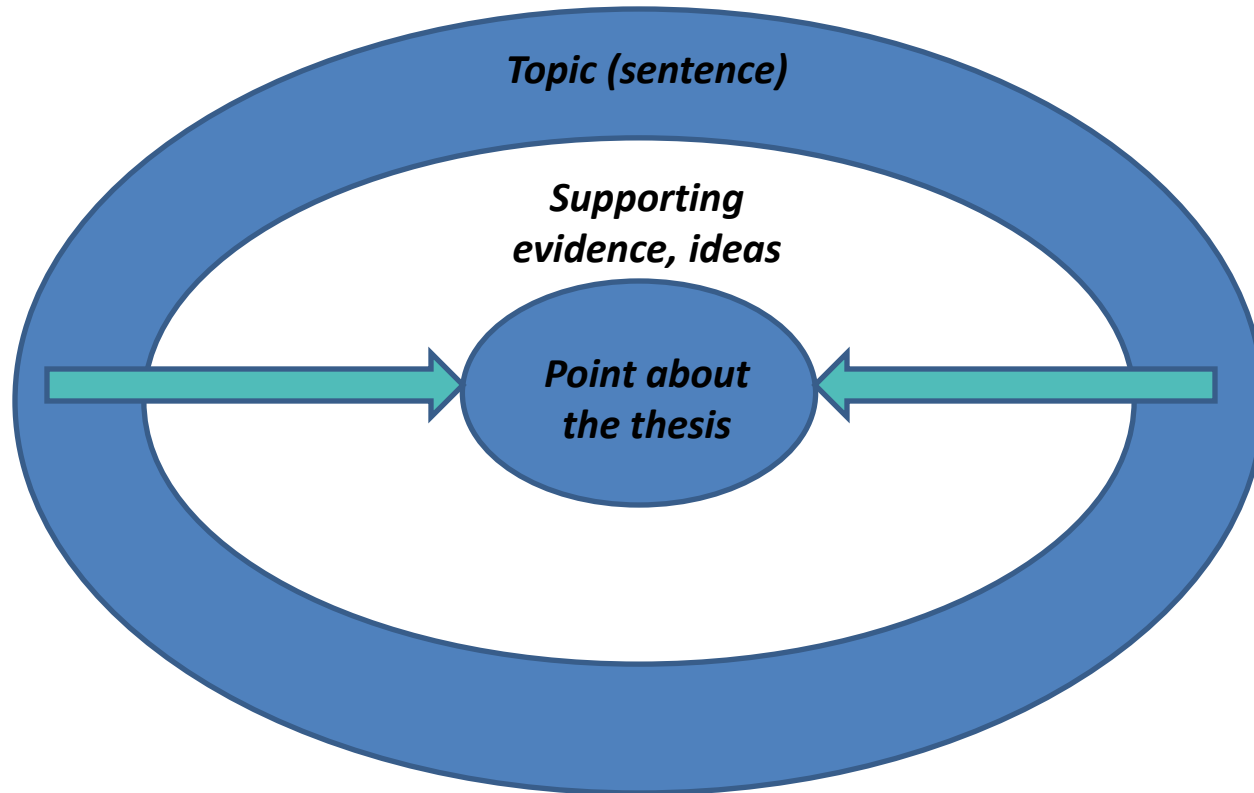
Adapted from "How to Write a Paragraph: The Art of Substantive Writing" by R. Paul and L. Elder. Copyright 2003 by Foundation for Critical Thinking

Example of a substantive paragraph

Although these sites may give some indication of a doctor's interpersonal skills, research indicates that they do not supply reliable information about a doctor's medical skills and may actively harm existing doctor-patient relationships.

Not only are the comments on sites like "Rate my Doctor" questionable, some research shows that they could damage the doctor-patient relationship. For example, Smith (2011) , in a survey of 300 Canadian physicians concluded…In addition, Brown (2012) demonstrated… This research suggests that if a patient has an existing, good relationship with a doctor, sites like "Rate my Doctor" can lead to mistrust of the physician and noncompliance with treatments.

Outlining

Conclusion/Thesis: Sites such as "Rate My Doctor" do not supply reliable information about a doctor's medical skills and may actively harm existing doctor-patient relationships, although they may give some indication of a doctor's interpersonal skills."

Intro

Section 1-Why these sites do not supply reliable information

PARA 1a-They are not reliable because of commentators' lack of medical knowledge

PARA 1b- They are not reliable because…

Section 2-How they actively harm existing doctor-patient relationships

PARA 2a- SAMPLE PARAGRAPH

PARA 2b- These sites can lead to non-compliance with treatment…

Section 3-Why and how the sites give indication of doctors' interpersonal skills

PARA 3a-Why

PARA 3b-How

Conclusion

Principles for learning CT through writing

- CT feeds well structured, developed, logical writing and vice versa.

- Sharpening the focus and organization of a piece of writing helps to sharpen critical thinking on a topic.

- "Writing to think" and "thinking to write" i.e., focusing on paper's thesis/conclusion, development, organization and the quality of the argument are mutually supportive skills.

- The development of thinking is evident in the drafting process of a piece of writing.

- Writing is a way of engaging in critical dialogue with oneself and one's audience.

Checks for demonstrating CT through writing

- Have you used your drafting process to think through to your conclusion systematically, using a system and set of criteria that are appropriate to the discipline and the assignment or writing occasion?

- Have you done multiple drafts, keeping in mind that remember there is no good writing, only rewriting?

- Have you planned enough time for your thinking, reflection, and drafting?

- Have you maintained coherence, unity, development and proper emphasis in your paragraphs and in your sections?

- Have you used an outline (or some kind of prewriting) to check the connections between the sections and your conclusion?

- Do your paragraphs and sections lead your readers closer and closer to your conclusions?

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Tips for visual organization of your work

- Use of visual analytical tools to express your ideas:

  – Concept maps

  – Charts

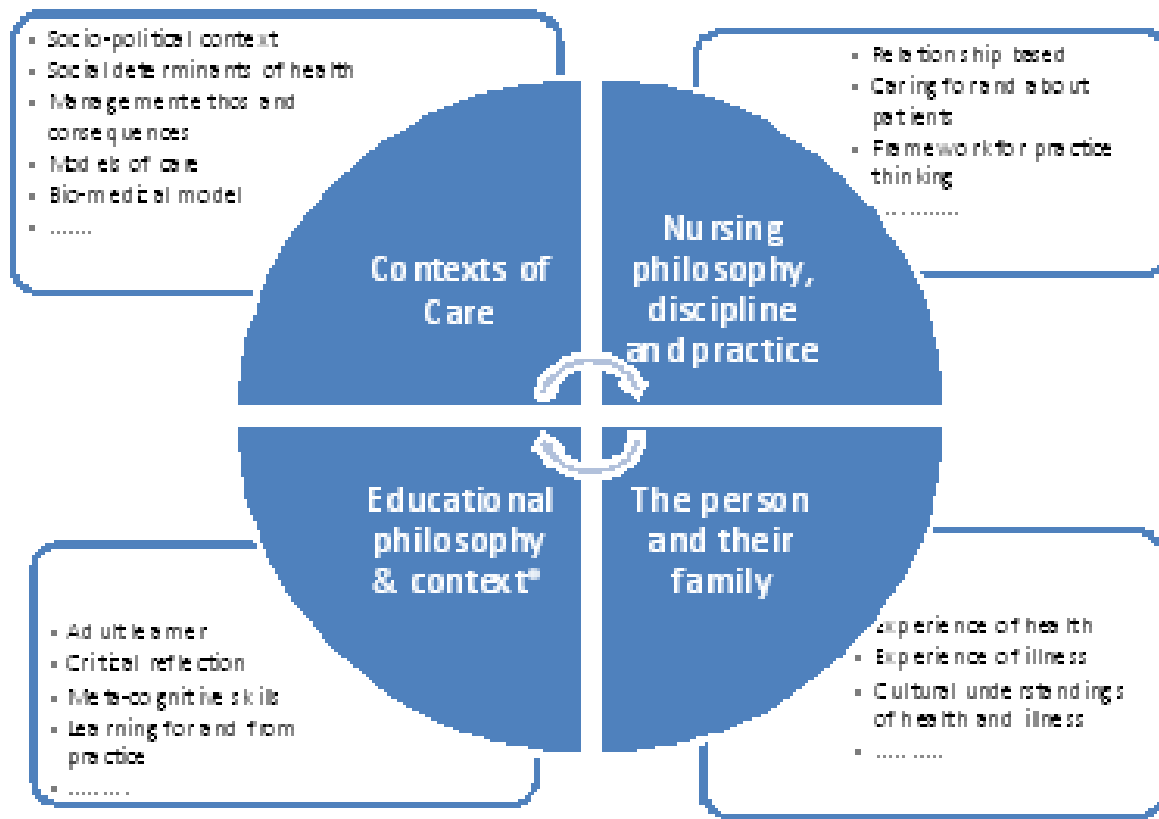 – Thematic matrices

  – Tables

  – Figures

  – Etc.
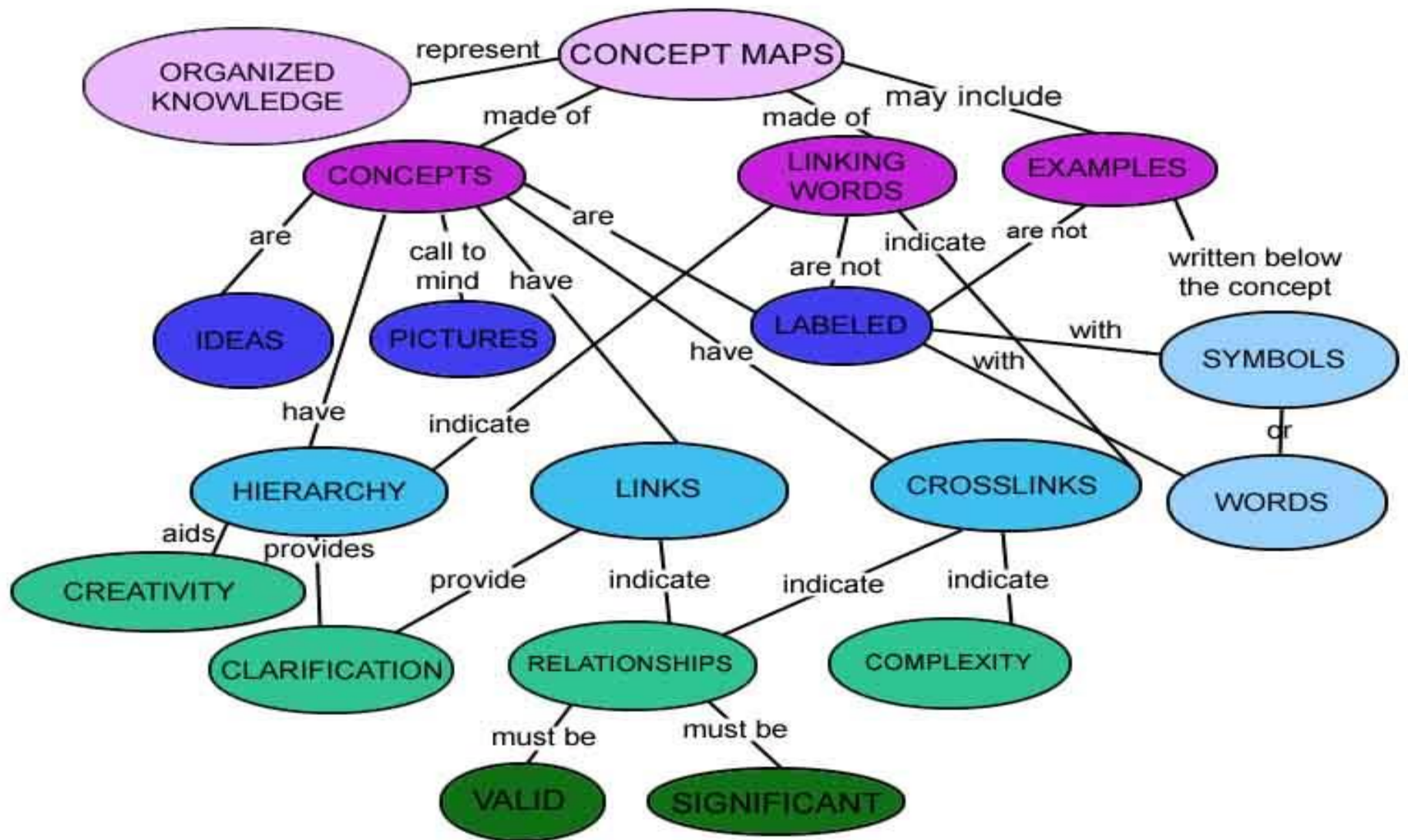
Stages of Teacher Development

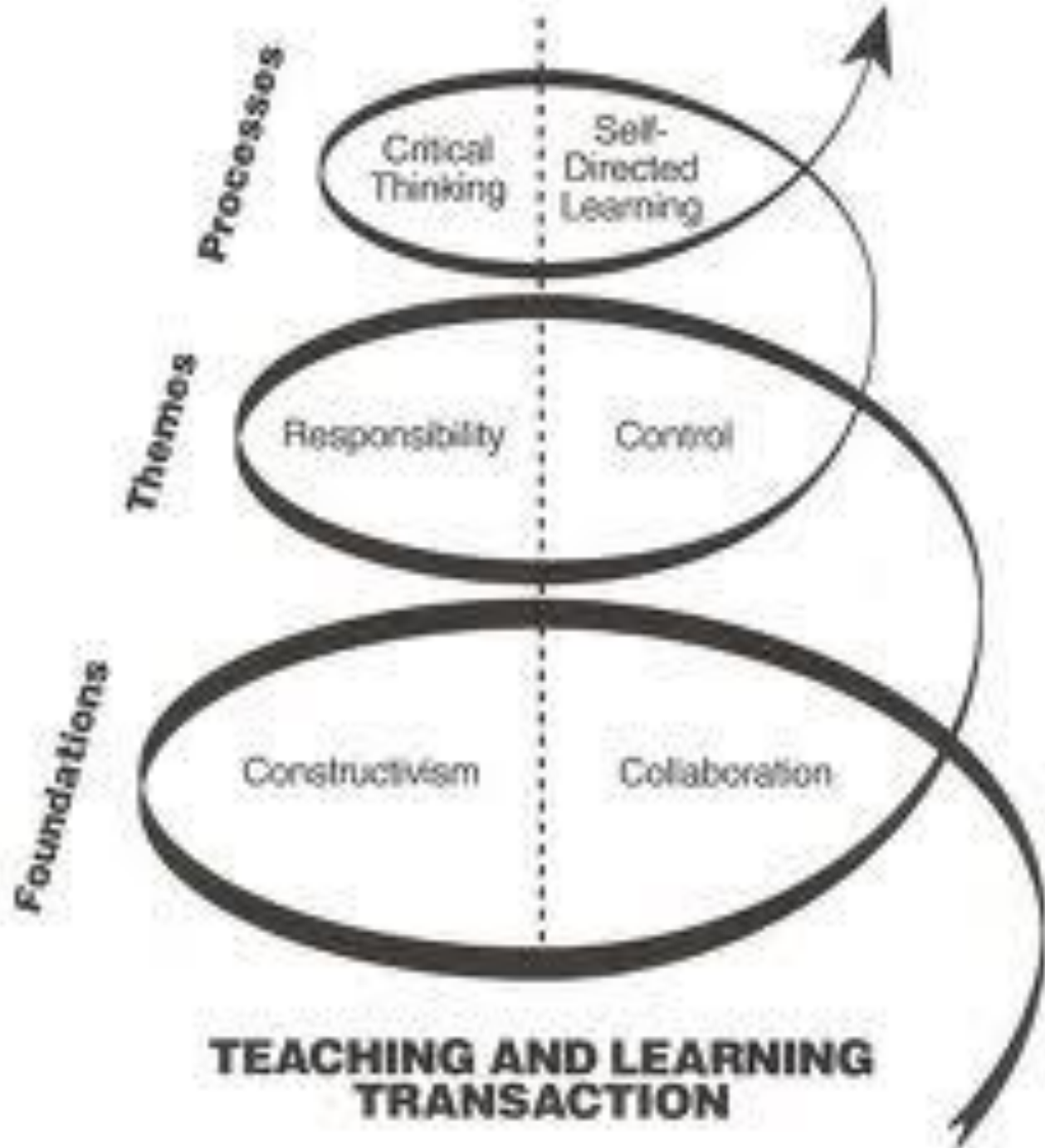|	Traditional (Instruction)	Extended (Knowledge Construction)
Activity	Teacher-centered and didactic	Learner-centered and interactive
Teacher Role	Fact teller and expert	Collaborator and sometimes learner
Student Role	Listener and learner	Collaborator and sometimes expert
Learning emphasis	Facts and replication	Relationships and inquiry
Concept of Knowledge	Accumulation	Transformation
Demonstration of Success	Quantity	Quality
Assessment	Norm-referenced and multiple games	Criterion-referenced and performance portfolios
Technology Use	Seat Work	Communication, collaboration, information, access, and expression

Figure 1 : Conceptual Framework

- Socio-political context
- Social determinants of health
- Management ethos and consequences
- Models of care
- Bio-medical model
- ....

Contexts of Care

- Relationship based
- Caring for and about patients
- Framework for practice thinking
- ....

Nursing philosophy, discipline and practice

- Adult learner
- Critical reflection
- Meta-cognitive skills
- Learning for and from practice
- ....

Educational philosophy & context

The person and their family

- Experience of health
- Experience of illness
- Cultural understandings of health and illness
- ....

Context:
Social determinants, political situation, stakeholders power and interests, economic issues (fiscal space, fiscal decentralization), individual level factors (marital status, gender)

	Design	Implemen-tation	Outputs	Outcomes	Impact
Dimensions	**Situation analysis** Labour market Organization and management capacity Regulatory systems Resources needs Criteria for choosing interventions Feasibility analysis	**Interventions** Education Regulatory Financial incentives Management and social support	**Attractiveness** Intentions to come, stay, leave	**Workforce performance** Availability Competence Productivity Responsiveness	**Improved performance health service delivery**
			Engagement **Deployment** Effective contracting and posting **Retention** Duration in service Job satisfaction	**Accessibility** Coverage of interventions **Productivity** Service utilization **Responsiveness** Patient satisfaction	*contributing to* **Improved health status**
Indicators (examples)	- Total graduates - Total health workers - Budget for human resources for health strategy/plans	- Policies on education and recruitment - Career pathways - Regulatory frame-works - Type/costs of incentives	- Intention to stay/leave - Number of health workers recruited - Funded positions - Stability index - "Survival" rates	- Staff ratios - Waiting lists - Absence rates - Coverage rates patient satisfaction	- Millennium Development Goal indicators - Health status - MMR / IMR

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Processes
- Critical Thinking
- Self-Directed Learning

Themes
- Responsibility
- Control

Foundations
- Constructivism
- Collaboration

TEACHING AND LEARNING TRANSACTION

Interactive Infographics

Reflections: Critical Thinking Tips

THANK YOU!

Evaluation

- What did you learn today?

- What did you like about the workshop?

- What recommendations do you have for next time?

- What other concerns do you have about teaching and learning at AU that we could address in a workshop?

References: Writing Perspective

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Ruggiero, V. R. (2009). *Becoming a critical thinker (6th ed.).* Boston: Houghton Mifflin.

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Useful Research Tutorials

Searching the AU Library Catalogue:
http://aupac.lib.athabascau.ca/screens/help_index.html

Finding Journal Articles in the Library's Collection (AKA AU Journal Title List Tutorial) : http://library.athabascau.ca/help/jportal/ejportal_viewlet_swf.html

AU Library Guide to the Research Process:
http://libguides.athabascau.ca/researchprocess

Internet Searching: http://libguides.athabascau.ca/internetsearching

Searching Google Scholar for AU Library Resources:
http://library.athabascau.ca/help/tutorials/googlescholar/googlescholar.html

Tips for Searching: http://libguides.athabascau.ca/booleansearching

Writing a Literature Review:
http://library.athabascau.ca/help/LitReviewGuide.php

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Useful Resources: Visualization tools

- Educational Inquiry Concept map:

http://eddcna.files.wordpress.com/2010/05/bubblus_educational_inquiry.png

- Interactive Infographics:

http://infogr.am/

- Novak, J. D. & A. J. Cañas, The Theory Underlying Concept Maps and How to Construct Them, Technical Report IHMC CmapTools 2006-01 Rev 01-2008, Florida Institute for Human and Machine Cognition, 2008", available at: http://cmap.ihmc.us/Publications/ResearchPapers/TheoryUnderlyingConceptMaps.pdf

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