

**A Model of Practical  
Epistemology to Inform Decisions  
of Pedagogy -  
A Work in Progress**

Richard Brown Ph.D.  
[richardb@waldenu.edu](mailto:richardb@waldenu.edu)  
[brownrw@tcfreenet.org](mailto:brownrw@tcfreenet.org)

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**Practical Epistemology**

- A work in progress
- Not a precise algorithm or mapping of tools to outcomes
- Inevitably biased view...
- Not clearly distinguished from several theorists...

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*Practical Epistemology:*  
**Inevitable Rationality**

My cat is an animal.  
All animals have hair.

Therefore...

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*Practical Epistemology:*  
**Overview**

- Big Picture Considerations
- Narrowing in - Designing Instruction
- Let's get Specific - The Learner and Practical Epistemology
- Selecting Strategies and Tools

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*Practical Epistemology:*  
**Designing Instruction -  
The New Technologies**

- Expensive (People and \$\$\$)
- Time Consuming
- Complex Environments Possible
- Maintenance and Revision
- Systematic Planning Critical
- Fully Articulated Mission and Goals are REQUIRED

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*Practical Epistemology:*  
**Designing Instruction -  
The ADDIE Model Plus**

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graph LR; StartNA[Start NA] --> Design; Design --> Development; Development --> Delivery; Delivery --> FormativeEvaluation[Formative Evaluation]; FormativeEvaluation --> SummativeEvaluation[Summative Evaluation]; SummativeEvaluation --> Revision; Revision --> Design; AdminSupport[Administrative student and curriculum support (initial and ongoing)] --> Design; AdminSupport --> Development;
```

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Practical Epistemology:  
**Designing Instruction -  
The ADDIE Model Plus**

- Needs - Mission Related; Why do anything?
- Goals - What we expect from learners at "the end"...
- Objectives - Specifically....
- Strategies and Tools - How to...
- Development - Roll up your sleeves and get out the checkbook...
- Implementation, Evaluation, and Revision - Well?

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Practical Epistemology:  
**Knowledge Systems**  
An organized system of  
concepts, rules, and  
processes

<b>Natural Systems</b>	<b>Man-made Systems</b>
• "Educated guess"	• Specified/Invented
• Evolving	• Static
• Theory-building	• Theory-driven
• Scientific Method	• Acquire/learn – Acquisition

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Practical Epistemology:  
**Designing Instruction -  
A Traditional Taxonomy:  
Robert Gagne**

• Verbal Information	• Cognitive Strategies
• Intellectual Skills	• Attitudes
– Discriminations	• Motor Skills
– Concrete Concepts	
– Defined Concepts	
– Rules	
– Higher Order Rules	

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*Practical Epistemology:*  
**Events of Instruction and Associated Learning Processes**  
Robert Gagne

<b>Events of Instruction:</b>	<b>Learning Process:</b>
1) Gaining attention	Attention
2) Inform learner of objective	Expectancy
3) Stimulate recall	Retrieval to working memory
4) Present stimulus	Pattern recognition/attention
5) Provide guidance	Chunking, rehearsal
6) Elicit performance	Retrieval, responding
7) Provide feedback	Reinforcement, fix errors
8) Assess performance	Responding, retention
9) Enhance retention/transfer	Retention, retrieval, generalization

From: *Psychology of Learning for Instruction* (1994); M.P. Driscoll

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*Practical Epistemology:*  
**The Objectivist / Constructivist Brouhaha**

- Internalizing external reality vs construct unique and individual reality
- Independent of individual vs dependence on individual understanding
- Individual processes symbols vs builds or creates symbols

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*Practical Epistemology:*  
**A New Focus on the Learner - Jonassen et al**

- Reasoning
- Problem Solving
- Retention, understanding, and use
- Cognitive flexibility
- Mindful reflection

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Practical Epistemology:  
A New Focus on the  
Learner - Jonassen et al  
(cont.)

- Rich/complex learning environments incorporating authentic activity
- Social negotiation
- Juxtaposition of instructional content
- Nurturance of reflexivity

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Practical Epistemology:  
The Learner and  
Practical Epistemology

- A Logical Being - Inevitably
  - Inference analysis/appraisal
  - Inference generation
- Schema - Organic and Evolving
- Levels of Processing
- Motivational Considerations
- A Focus on Cognitive and Motivational Self-Analysis

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Practical Epistemology:  
A Logical Being, Inevitably

All animals have hair.  
My cat is an animal.

Therefore.....

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Practical Epistemology:  
**A Logical Being, Inevitably**

- The syllogism as building block of cognition and decision making
  - Premise
  - Inference
  - Conclusion
  - Chains of reasoning

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Practical Epistemology:  
**Schema - Organic and Evolving**

- Pattern of Activation vs Stable Model
- Inference Structures
- Inclusive of Motivational Attributes

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Practical Epistemology:  
**"Informal Logic"**

- Natural language productions
- Inference analysis
- Inference generation
- Mortar for concepts, rules, and processes
- Simple model for complex capabilities
  - Creativity
  - Decision making
  - Internal decisions regarding meaning, values, beliefs

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*Practical Epistemology:*  
**Levels of Processing**

- Unconscious monitoring, processing, and incorporation of rewards, punishments, and regularities
- Conscious deliberate processing, and creation of regularities
- Reflective analysis of cognition and motivation

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*Practical Epistemology:*  
**Motivational Considerations**

- Personal Control, Mastery and Autonomy
- Identity, Meaning and Purpose
- Maslow's Hierarchy
- Constant force on decisions of how to think, what to believe and how to act; typically unconscious
- Can be Manipulated

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*Practical Epistemology:*  
**Motivational Considerations - Personal Control, Mastery and Autonomy**

- Goal: autonomous, self-directed, intrinsically motivated learners
- Relevant research:
  - Rotter - locus of control
  - Deci - intrinsic / extrinsic motivation
  - deCharms - pawn / origin
  - Langer - mindfulness / mindlessness

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*Practical Epistemology:*  
**Motivational Considerations -  
Personal Control, Mastery  
and Autonomy**

"Autonomy support, which is the opposite of control, means being able to take the other person's perspective and work from there. It means actively encouraging self-initiation, experimentation, and responsibility, and it may very well require setting limits. But autonomy support functions through encouragement, not pressure."  
*Why we do what we do; (book; 1995) Edward L. Deci*

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*Practical Epistemology:*  
**Designing Strategies and  
Selecting Tools**

- Autonomy and Independence vs Manipulation and Control
- Relevance and Meaningful Activities vs Only Drill and Practice
- Reflective Analysis vs Automatic Processing
- Strategies Selected for Results
- Long-term mission vs today's lesson

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*Practical Epistemology:*  
**Strategies and Tools**

- We are in the business of education, not the business of technology
- Open Dialogue and explicit reflection vs "parental" monologue and hidden agenda
- Exploration and participation vs "obedient rat" syndrome
- Negotiated contracts vs carrot and stick jumping through hoops
- Reflective analysis vs regurgitation...

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*Practical Epistemology:*  
**Strategies and Tools (cont.)**

- Inference diagramming
- Providing a menu of options
- Reflective journaling
- Discipline-specific inference history

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*Practical Epistemology:*  
**Critical Elements**

- Vision and mission - well-defined
- Logic and reasoned dialogue are central
- My bias:

Our business is creating autonomous, self-analytical, capable, and motivated participants in a democratic capitalist environment.

Environmental contingencies are selected and designed to support this effort.

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*Practical Epistemology:*  
**Next Steps and Additional Resources**

- Detailed strategies (including purposes)
- Relation to "transformational learning" and "critical theory"
- Apply the model as we develop academic programs
- Partner with specific teachers / institutions and create case studies of the application of the model

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*Practical Epistemology:  
Next Steps and Additional  
Resources*

- This presentation, the associated paper, and related resources/links (August 1):  
**[www.studyskillsweb.com/ssw/](http://www.studyskillsweb.com/ssw/)**
- Walden's Instructional Support Services:  
**[www.waldenu.edu/info-tech/instruction/](http://www.waldenu.edu/info-tech/instruction/)**
- My addresses:  
**[richardb@waldenu.edu](mailto:richardb@waldenu.edu)**

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