Can We Reformulate/Generalize "The Scientific Method"?

In "Inquiry-based Learning," why aren't we asking more questions?
Is there a simplified, question-based formulation of "knowledge acquisition"?

What can I observe? What do I observe?

    What is observable directly without "help"?

    What is observable with "help"?

        Is what I observe changed by the "help"?

        Am I using the "help" in such a way that it is "helpful"?

    What is observable indirectly (by inference or deduction)?

    Are my observations:

        accurately recorded?

        honestly reported?

What can I learn from these observations?

    What can I conclude based on my observations?

    What can I say that is consistent with my observations?

    What can I conclude based on inferences from my observations?

How sure am I that I am right?

    If I repeated or changed my method of observation, would it change what I:

        observe?

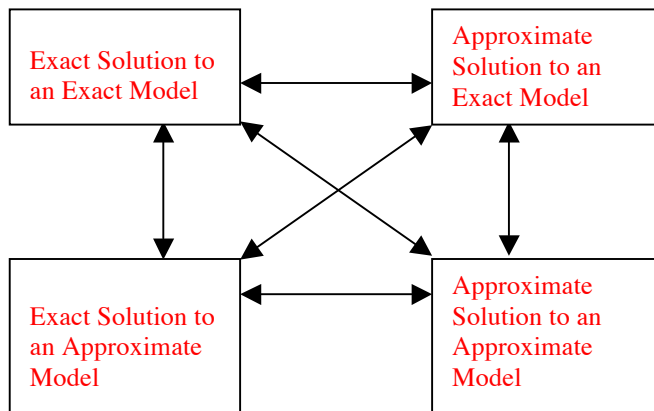   infer?

        conclude?

    Is what I have observed consistent with what others have observed?

    Is what I have inferred consistent with what others have inferred?

    Is what I have concluded consistent with what others have concluded?

Why should I care?

How Ought We to Evaluate the Model and Modeling Process?

Exact Solution to an Exact Model	Approximate Solution to an Exact Model
Exact Solution to an Approximate Model	Approximate Solution to an Approximate Model

upper left: what we want
lower left: the usual high school/undergraduate experience
upper right: idealized research
lower right: the real world

Is the model extensible?

What approximations were made to formulate the problem?

What approximations were made to implement the formulation?

How would one proceed to remove these approximations?

What would be the expected effect of these improvements?

Can the model be used as a sub-model for a larger system?