Introduction to Formal Logic

with Joelle Hodge

Lesson 4: The Classical Origin and Medieval Recovery of Logic

Outline:

Teaching Ch. 2.1, Part I - Aristotle Gets the Ball Rolling: Classical Origins and Medieval Recovery

- **Helping Your Students Appreciate the History of Formal Logic**
  - IA. Understanding what Aristotle was responding to
  - IB. How can a study in logic benefit twenty-first-century scholars?
  - IC. The importance of students not just knowing what they believe, but why they believe it
  - ID. With regard to taking a position, why is validity of an argument as important as the truth or facts of the argument?
- **Similarities between Geometric Study and Future Logical Study**
  - IIA. Understanding axioms and a priori truths—the basis of argument
  - IIA1. Axioms: truths accepted as a given
  - IIA2. A priori: self-evident truths—those things which cannot be denied by the senses
  - IIB. Connecting axioms and self-evident truths to derive (deduce) a new truth
  - IIC. Logic becomes the "instrument" or tool to analyze collected information and draw new conclusions
- **A Healthy Critique: Limits of Categorical/Aristotelian Logic**
  - IIIA. Why it's important to study the Stoics
  - IIIB. The typical teenager: a burgeoning Stoic—how to stave off rabbit trails by tackling Stoicism head-on
  - IIIC. Paradoxes and nonsense in the classroom: "Nonsense remains nonsense even when we talk it about God." - C.S. Lewis, *The Problem of Pain*
  - IIID. Ch. 2.2, Part II - Aristotle Is Lost and Then Found: The Growth and Divergence of Modern Logic Bacon, Mill, Boole - more weaknesses and limitations of Aristotelian logic
  - IIID1. The scientific method
  - IIID2. Deduction of a priori has its limitations
- **New Home for Aristotelian Logic**
  - IVA. Nineteenth century
  - IVA1. George Boole
  - IVA2. John Stuart Mill
  - IVB. Twenty-first century

    - IVB1. Engineers
    - IVB2. Lawyers
    - IVB3. Accountants
    - IVB4. Coders
    - IVB5. Political scientists
    - IVB6. Mathematicians
    - IVB7. Web designers
    - IVB8. Scientists
- **Logic: The Tool to Making Sense of Chaos and Confusion (a theme that should resonate with students)**
    - IVA. Organization allows for learning
    - IVB. Link to executive function skills
    - IVC. Orderly categories of categorical logic