

## LEARNING TO LEARN

### 1. Models

1. Traditional – student is empty vessel, teacher should fill vessel with information.
2. Plutarch – a mind is not a vessel to be filled, but a fire to be kindled
3. Dewey – learning by doing and sharing.
4. What we learn is determined by what we know, and what we are exposed to – in a way that is compatible with our past experiences and our expectations.

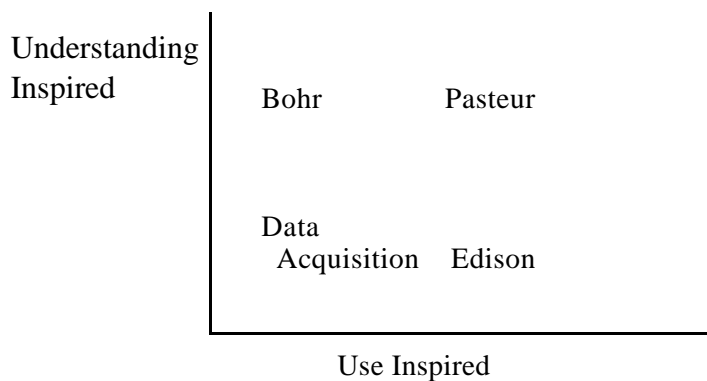
### II Possibilities and Matches and Mismatches

1. Teachers vary in their methods: lecture, demonstration, lead to self-discovery; in their goals: principles, applications, memorization, understanding.
2. Students take in and process information differently – seeing or hearing; reflecting or acting; intuition or logical reasoning.
3. When there is a mismatch everyone loses.
4. Awareness of styles will help reduce the amount of mismatch.

### III. Discussion of the learning styles inventory

### IV. Pasteur's Quadrant (from D. Stokes)

#### Interaction of Understanding and Use Driven Facts



- V. Same basic points to put perspective on a college science course/education.
1. The Island/Ocean Concept.
  5. The Hammer Principle
  6. Data → Facts → Knowledge → Wisdom
  7. The Law of Unintended Consequences