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

<table>
<thead>
<tr>
<th>Understanding</th>
<th>Bohr</th>
<th>Pasteur</th>
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<tbody>
<tr>
<td>Inspired</td>
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<td>Data</td>
<td>Acquisition</td>
<td>Edison</td>
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<td>Use Inspired</td>
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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