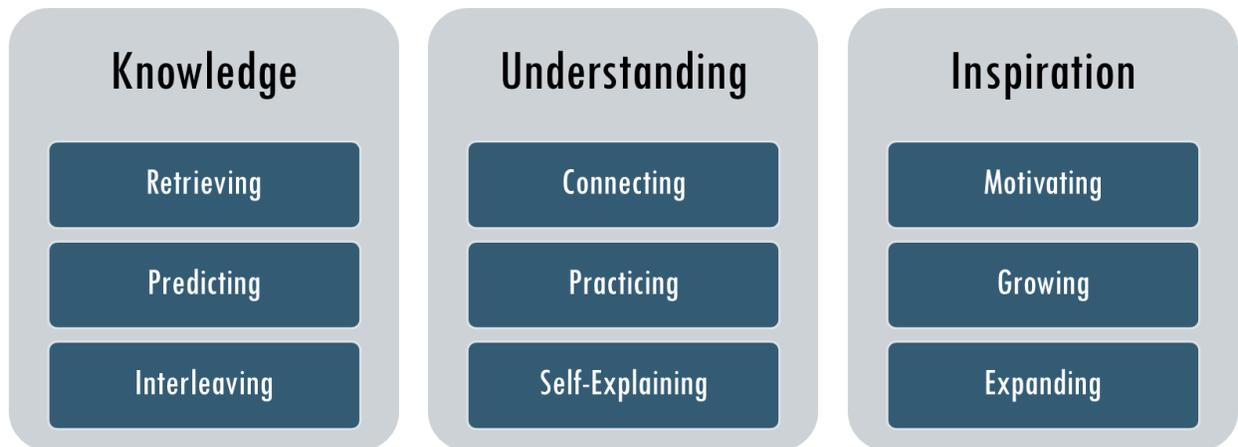


Small Teaching: Everyday Lessons from the Science of Learning
by James Lang, 2016



**Students bring a lack of basic knowledge or study habits.

As an instructor, one of our first and foremost important tasks is to help students develop a rich body of knowledge in our content areas so they can **retrieve** and use this knowledge for application.

**Students bring pre-conceived notions of the depth of their knowledge.

As an instructor, we need to provide opportunities for **prediction** before cognitive skills are fully developed, allowing students to realize gaps in their knowledge.

**Students bring pre-conceived notions of the effectiveness of their study strategies.

As an instructor, we need to provide opportunities to **interleave** course content so that students can encode, consolidate, and organize newly learned materials.

**Students bring mental models of the subject matter to class.

As an instructor, we need to help students recognize the inadequacy of the current models and **motivate** them to care that their current model is inadequate.

**Students bring attitudes about intelligence and learning to class.

As an instructor, we need to show them that what we believe in their ability to learn and **grow**.

**Instructors bring years of experience and sometimes monotony.

As an instructor, we need to constantly **expand** our knowledge and tools to improve the learning environment.

	Principles	Quick Tips
Retrieval	<p>Frequency matters</p> <p>Align practice and assessments</p> <p>Require thinking</p>	<p>Open class sessions by asking students questions.</p> <p>Give students frequent low stakes quizzes (at least weekly).</p> <p>Close class by asking students to write down the most important topics.</p> <p>Close class by having students take a short quiz or solve a problem.</p>
Predicting	<p>Stay conceptual</p> <p>Provide fast feedback</p> <p>Induce reflection</p>	<p>Ask students to write down what they already know about a subject.</p> <p>Give students a brief pre-test at the beginning of a unit/chapter.</p> <p>When presenting cases, stop and ask students to predict what the outcome/answer is.</p> <p>When closing class, ask students to predict what will be covered in the next section.</p>
Interleaving	<p>Block and interleave</p> <p>Keep it small, keep it frequent</p> <p>Explain and support</p>	<p>Open or close each class session with retrieval practice for older course content.</p> <p>Create mini-weekly reviews.</p> <p>Stagger quizzes and deadlines to ensure that students benefit from the power of spaced learning.</p> <p>Reserve a small part of the major exams for older course content.</p>
Motivating	<p>Acknowledge emotions in the room</p> <p>Make it social</p> <p>Show enthusiasm</p>	<p>Get to class early, spend a few minutes getting to know your students.</p> <p>Open class by eliciting emotion.</p> <p>Consider how practitioners in your field make a difference and tell students.</p> <p>Keep the overarching purpose of any class period in view.</p> <p>Use visual reminders.</p> <p>Show enthusiasm for your discipline, for individual problems or units. Share your hope that students will find them as fascinating as you do.</p>
Growing	<p>Design for growth</p> <p>Communicate for growth</p> <p>Feedback for growth</p>	<p>Provide early success opportunities through assignment sequencing or assessment design.</p> <p>Consider offering a reward for effort or improvement, either through weighting your assignments heavier in the latter half or through a portion of the grade.</p> <p>Provide examples of initial failure or setbacks to demonstrate that failures can be overcome.</p> <p>Ask top students to write letters to future students about how they succeeded in the course.</p> <p>Include a “Tips for Success” in your syllabus and refer to it throughout the semester.</p>
Expanding	<p>Varies</p>	<p>Commit to reading at least one new book on teaching and learning each year.</p> <p>Subscribe to an email list from Chronicle of Higher Education or similar site.</p> <p>Create a personal learning network on Twitter.</p> <p>Attend a conference on teaching and learning in your discipline.</p> <p>Attend events sponsored by CITL or Kelley. ☺</p>