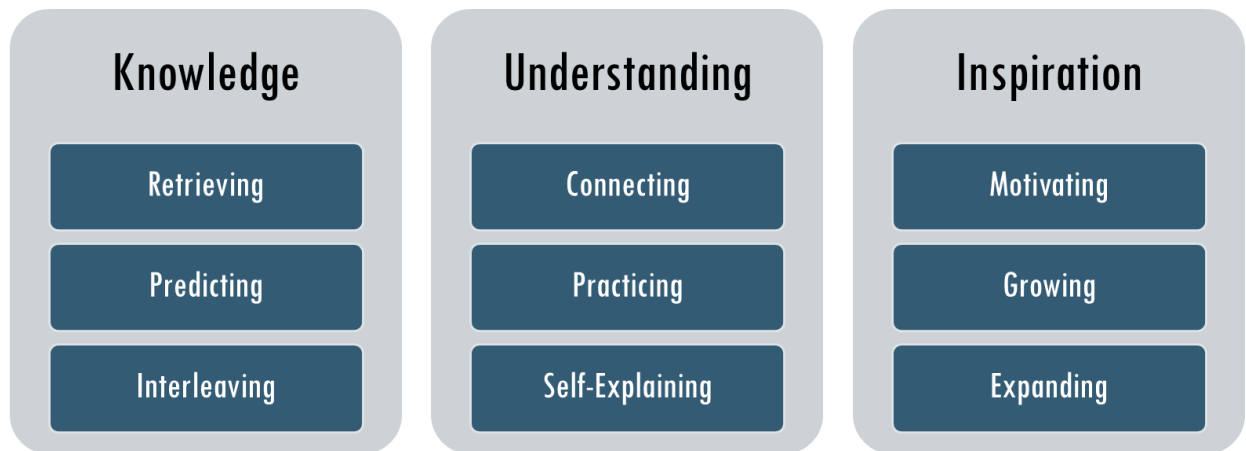


**Small Teaching: Everyday Lessons from the Science of Learning  
by James Lang, 2016**



\*\*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.

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