

ENGAGING STRATEGIES

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Methods of Engaging Students at the Start of Class: Encouraging Students to be Involved in their Own Learning

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The 5-E Learning Cycle, a centerpiece of inquiry learning, starts with ENGAGE. The purpose of *Engage* can be stated in a variety of ways: to let students know the focus/direction of the class; to start a discussion or team project; to help students get actively involved in their own learning; to jump-start students' brains; and to increase the capacity for critical thinking.

There are a variety of ways to Engage a class. Some methods work well for one instructor, while others work well for another instructor. No one method is best for everyone, or for all classes, but it is important that all classes start with some form of Engage activity.

Jokes and **cartoons** are two methods that may be used to *Engage* a class. These work best if the joke or cartoon is directly related to the topic that will follow, and stimulates critical thinking in students prior to beginning the topic. These may directly raise questions, either from the instructor or from the students, that lead to productive discussion. **Poems** and **songs** add a similar dimension to the *Engage* process. Songs may relate directly to the topic, or may be used in the background to set the stage for an *Exploration*.

Beginning class with a **question** (Can you see cells without a microscope?) or simple activity is yet another form of *Engage*. Here, students are actively involved with each other and with the instructor in setting the stage for what is to come. A variation is in sharing a **picture** and asking "what do you see?". The answers given, by individuals or small groups, lead directly to the topic of the day. Taking this one step further we can have students *Engage* in the lesson by "acting out" **role-playing** a process (becoming molecules in a biochemical pathway, becoming predators and prey, etc). In many ways this blurs the line between *Engage* and *Explore*, but there's nothing wrong with that – the 5-E cycle is in actuality a continuum, not five discrete pieces.

Demonstrations are a wonderful way to start a class as well. Especially in the physical sciences, where demonstrations may involve light, color change, explosions, etc, teacher-led or student-led demonstrations may be used to capture the attention of the class and prepare them for the lesson that follows (questions about what they saw or what happened that leads into an Exploration). Similarly, **slides** or other **pictures** (perhaps a strange medical condition) that require students or groups to seek answers to what is happening also work well.

Current events, especially those linked to the topics being studied, are always good ways to *Engage* a group of students. These may reinforce something already studied, or may be examples of something yet to come. Often these current events are tied to **ethical issues**, which

(if done properly) lead to great critical thinking explorations for small groups. It is important for all students to realize that science is about the here and now, not just about experiments done somewhere in the past, and spontaneous current events (newspaper articles, for instance) help to convey that message.

Starting a class with a **contradictory** or **startling statement** is a great way to *Engage* young minds. A statement such as “Kissing can lead to ulcers” (before discussing *Heliobacter* and its effects in the GI tract) causes students to take note and wait to see what comes next. Students are often caught repeating these startling statements to others outside the classroom, thus reinforcing the learning for the student. A variation of this is to show a **discrepant event**, some phenomenon that seems to be illogical or unexpected. There are lots of demonstrations intended to physics or chemistry classes that do this, so ask a physics or chemistry teacher. **Sleight of hand** (“**magic tricks**”) or **devices** you can find in a magic shop are other examples of discrepant events. If possible, try to use a discrepant event that relates to the topic to be studied.

Finally, **role-playing by the instructor** can be a very effective *Engage* technique. **Dressing up** as a historic or contemporary figure in science, and acting in first person throughout the lesson, will cause sleepy minds to Engage with the instructor (luminary) and what comes next. Pretending and acting like you are a molecule (say an enzyme, about to digest a starch molecule) is very effective for introducing a unit on molecular biology, or chemistry.

It is important for instructors to realize that no one method of *Engage* fits all. Mix it up. Let students guess what you are going to do today. Remember also that different learning styles respond differently to different *Engage* methods; different teaching styles adapt to certain *Engage* methods better than others. Use what works well for you and your students, and that may vary from year to year, and even between classes. I often find that the methods I use for science majors are not the same methods I use for non-science majors, and the methods I use with freshmen are often not the same as what I use for seniors.

Engage is a very important part of the 5-E Learning Cycle – everything else flows from it. Without an *Engage* many students are not tuned in to the rest of the lesson, and some wind up being left behind. Like all of us, students need a road map to know where they are headed – we need to start the minds and be sure they are headed in the right direction. That’s **ENGAGE!**