

## Advice for pre-class reading assignments and quizzes

By Carl Wieman

The use of “active learning” teaching (students spending much of the class time working through problems and questions, often in small groups, with guidance and feedback by instructor) is greatly facilitated by having the students read in preparation for class. As noted in reference 1 and confirmed in several other classes, it is possible to ensure that over 80% of the students will consistently complete the reading by following a few simple steps listed below:

- **Do not start out class by repeating what was in the reading!** This penalizes the students that did it and rewards those that did not. It’s good to regularly refer to what was in the reading during class, but do not repeat it.
- Make the reading targeted and short with a clear connection to the activities in the upcoming classes, and give guidance as to which sections could be skipped if they are irrelevant.
- Although students will recognize the inherent value of doing the reading, it is essential to give grade credit for completing the reading since they have been so conditioned to discount anything that is not graded. This is most easily done using a simple online quiz administered via the course management system, due shortly before the first class that uses the material.
- Have the total of all the online quizzes count for a few % of the course grade.
- Although preferences vary, it is common to have one reading assignment & quiz each week.
- Completing the assignment should not usually take students more than an hour, with the quiz portion taking no more than 10–15 min of that time. Include that time in your workload expectations for the course.
- As with all aspects of your instruction, it is good to explain to the students why you are having them do pre-reading.
- Quiz question design tips:
  - Just ask a few questions, 3-6 is adequate
  - Have at least some questions that force students to look at the book, for example asking something about “figure 15.2”, or “example 6.1”.
  - The questions should be kept simple, focusing on basic knowledge, definitions, and comprehension. This is just a reward for their doing the reading and an opportunity to draw their attention to key items in this first exposure, not a test of their mastery of the material. This also makes it quick and easy to make up computer-graded multiple choice quizzes.
  - The two open-ended questions “What topic did you find the most difficult?”, and “What topic did you find the most interesting?” can be valuable. They provide useful reflection for the students, and useful guidance to the instructor, and the responses can be skimmed through quite quickly. Students automatically receive credit for entering anything for these answers. It is unlikely for this to be abused, but it is easy to fix if it is.
- **And did I mention, do not start out class by repeating what was in the reading.**

1. Preparing students for class: How to get 80% of students reading the textbook before class, Cynthia Heiner, Amanda Banet, and Carl Wieman, Amer. J. Physics 82(10), 989 (2014); doi: 10.1119/1.4895008 [http://cwsei.ubc.ca/SEI\\_research/files/Heiner-Banet-Wieman\\_Pre-Reading\\_AJP2014.pdf](http://cwsei.ubc.ca/SEI_research/files/Heiner-Banet-Wieman_Pre-Reading_AJP2014.pdf)