

6.055J/2.038J (Spring 2010)

Reading memos

[First section borrowed almost verbatim from Edwin F. Taylor, 'Guest comment: Only the student knows', *American Journal of Physics* 60(3):201–202 (March 1992).]

Students!

I have a problem with which only you can help. I have been working on these notes too intently and for too long to see what is wrong with them. Only you, coming fresh to the subject, can recognize where they fail to help you understand. In this you are a world-class expert! Will you help?

As you read the notes jot down, either on a printed copy of the notes or on the NB online comment system, difficulties as they appear; mark the location of the problem *as specifically as possible*. As you are reading, if you cannot figure out what is wrong, note that too! If a later passage clears up a point, note that too in your comments. The original comment on the confusing spot and the later comment along the lines of 'Oh, now I see/know why ...', are both useful – for they tell me that I have explained material in a confusing order. At the end of the reading, note general difficulties that you have and questions that you would like answered. **Do not revise your notes**; it is important that they be spontaneous, written down at the very minute you are reading and wondering about a point.

If you do not understand an equation, derivation, or passage, it is **my fault**. Help me pinpoint where the notes fall short. Submit your reading memo online using the NB system. If you made your comments on a printed copy of the notes, transfer those comments to NB. NB is a kind of social networking site: You can see comments left by other students (unless the comment was submitted as a private comment or as just for the instructor); there you can help answer the questions from other students and participate in a discussion.

Parable of the blind carpenter. I am like a carpenter who has spent years building a house. During that time the carpenter has gradually gone blind, now cannot see the house at all, and must rely on the occupants of the house to report what is wrong: 'We need more cupboards in the kitchen', or 'Water is leaking into the bedroom.' Even though blind, the carpenter is still a competent worker and can fix most things, even some things that the occupants do not fully understand, such as exactly where the roof leaks. But the blind carpenter cannot fix things without being alerted by the occupants.

Will you help me finish this house? Thank you.

How reading memos help you

Reading memos help me and you. First, you get practice reading a technical textbook. The world is large and there are many lifetimes of fascinating ideas to learn. If you can learn from books, you have mastered a lifelong skill. Second, by reading with attention and with a questioning attitude, you participate in your own learning. That skill too will be useful for your whole life.

Third, reading memos reverse the usual teacher–student hierarchy. To see the contrast, think about problem sets. If you cannot solve a problem, you might feel incapable; I often felt that way as a student. On a reading memo, when you find a confusing spot, you have found a problem in the notes: You are right and I am wrong!

One of my teachers, Donald Knuth, was so interested in knowing of all such problems that he would write us a check for \$2.56 for every mistake that we found. I'm not as generous; on the other hand, maybe Knuth was not giving away much – who would cash a check from Knuth?

Use the reading memos to practice reading technical material, to practice formulating questions, and to be an expert.

How I will use reading memos

The reading memos will be due at 10pm the evening before each lecture. In other words, submit your NB comments by that time. Then I will use your comments to prepare what we do in the examples, demonstrations, explanations, and discussions questions for lecture.