What are undergraduate mathematics students likely to learn by reading their textbook before coming to class? Engineering undergraduates in a probability and statistics course were asked to read their textbook and answer several open-ended questions about the reading via an online quiz each night before class. In this talk, we will share results of a qualitative analysis of student responses to these quizzes, as well as findings of an end-of-semester student survey about these quizzes, as a way to investigate the following questions: How did these students read their textbooks? What they were able to learn from reading their textbooks? What types of questions they were able to answer based on their reading? How might such reading quizzes help students learn more from reading their textbook? Answers to these questions may allow instructors to make better use of in-class and out-of-class time and to be more responsive to their students’ learning needs. (Received September 26, 2006)