THE POWER OF VISUALIZING IN THE CLASSROOM

Case 1: Professor Ozeas S. Costa has been teaching Earth Science 100: Planet Earth: How it Works at The Ohio State University, Mansfield for four terms. He integrates between 1200-1300 images and Visualizing pedagogical elements into his PowerPoint slides, which drive his class. Just about every image in the Visualizing book can be found in his slides. His course is divided into 8 modules with 24 lessons. For each, lesson students can download the PowerPoint slides and handouts associated with the lessons being discussed.

“I would rather have the concept in pictures, images and graphics because they tell things that can't be said or written. That's why I selected this book – it offers many things that are visual. One of my favorite features of Visualizing is the process diagram – it is remarkable how these well designed diagrams help improve [students] understanding of processes that are very complex to explain, such as the nebula hypothesis or the behavior of seismic waves in Earth's interior.”

Case 2: Natalie Bursztyn teaches Introduction to Geology at Bakersfield College in the Central Valley of California. A majority of her students are required to take a science and science lab credit to complete their general education and few are genuinely interested in Geology.

“While most of the textbooks have illustrations throughout, the illustrations in Visualizing are phenomenal. Not just those that illustrate the concepts, but also the case studies, the flow charts, the process diagrams. What makes this phenomenal is that easily half my class is using the book, bringing it to class, talking about it, and highlighting it.”

Bursztyn's students “have expressed to [her] that they like to see to learn rather than read to learn. Visualizing books are about as close to a ‘picture book’ as can be done at the college level while still effectively teaching science. Once they're read, they can review the process diagram as a reminder.”

Case 3: Visualizing features are also used to enhance the lab/field portions of many science classes. At the University of Colorado, Paul Grogger, teaches Physical Geology. His course is a combination of a typical lecture and laboratory course but with an additional component of field investigations, both instructor-led and student-controlled.

“The reason the use of the text was successful is its outstanding illustrations and the text material that explained the illustrations; especially because I could use comments about the illustrations in the field investigations.”

Professor Grogger's field investigations are modeled after the Process Diagrams included in each chapter.

“The Physical Geology course has always been field oriented but during the past couple of years, with the Visualizing Physical Geology textbook there has been an improvement in some of the more difficult concepts by using the Process Diagrams, Tutorial Animations as well as the figures, maps, and illustrations in the text.”
Case 1: Professor Ozeas S. Costa teaches at The Ohio State University, Mansfield. On average, students’ final exam grades of B or better increased by nearly 32% while using Visualizing Geology by Murck.

“Grades are getting better because the course is getting better. The book (Visualizing) and the resources associated with the book have been a great help in that improvement.”

Case 2: Professor Cheryl Berg has been using Visualizing Environmental Science since Fall 2007 for Gateway Community College’s daytime Environmental Biology course. With Visualizing, she has observed much higher course grades than she did with her previous texts.

Professor Berg attributes her students’ results to their use of web quizzes on WileyPLUS. “The web quizzes on WileyPLUS are an excellent way to engage students with the course content and prepare students for the exam. My students find them to be a useful tool to not only check their conceptual learning but also to provide immediate feedback and an opportunity to clear up misconceptions.”
EVIDENCE OF IMPACT OF VISUALIZING ON LEARNING AND GRADES

Case 3: John Haworth and Donna Seagle at Chattanooga State Technical Community College had the same experience using *Visualizing Psychology* and WileyPLUS. “Our qualitative information from our students showed that they liked the text and WileyPLUS and were using them as study aids” says Haworth. Students completing the course with a C or better increased by 23% when the school adopted Visualizing.

Chattanooga State Technical Community College performed a correlation analysis between how students did on WileyPLUS and how well they did overall in the class. “Our correlation shows that when we adopted *Visualizing Psychology* and WileyPLUS we had a significant increase in grade average” explained Haworth. “There is a strong positive relationship between scores in WileyPLUS and Final Grade, when using a Wiley Visualizing textbook.”

Case 4: Keith Hench teaches Environmental Science at Kirkwood Community College. He realized a 20% increase in students receiving a B or better while using Berg, *Visualizing Environmental Science* in the online course.
STUDENTS’ REACTIONS TO VISUALIZING

Student 1: “Not only is the wording of the chapter easy to follow, but the detailed pictures with subtext help me to understand even more about what is going on. I actually enjoyed reading this chapter in the text. Imagine that!”

Student 2: “I really enjoyed the reading. The stop signs in the chapter provided questions that were important to understanding the chapter. The pictures were a nice break-up of the text, and provided interesting information.”

Student 3: “I like the way the pictures coordinate with the text. It brings the material to life. It makes geology interesting again.”

An Instructor’s Perspective: Duane Hampton of Western Michigan University collected feedback from 196 students using Visualizing Geology in his Earth Science class over a year and a half (Fall 07, Spring 08, a 1 –term summer course and Fall 08).

“Student Performance on exams has improved noticeably since I adopted Visualizing Geology. I believe that performance improvement is due to more students reading more of the textbook.”

– Duane Hampton

“31% of the students read at least six chapters of Visualizing Geology by Murck versus a much lower percentage when using a previous text.”

“My interpretation is that Visualizing is an order of magnitude – a factor of 10 – better than [my previous text]. Students are reading more of the book than what was the case previously. For whatever reason they weren’t doing it before and they’re doing it now and I’m the same person.”