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Leaving the Lectern

Cooperative Learning and the Critical First Days of Students Working in Groups

By Dean A. McManus

Anker Publishing Company, 2005, 236 pages, Hardcover: ISBN 1882982851, \$32.95 US

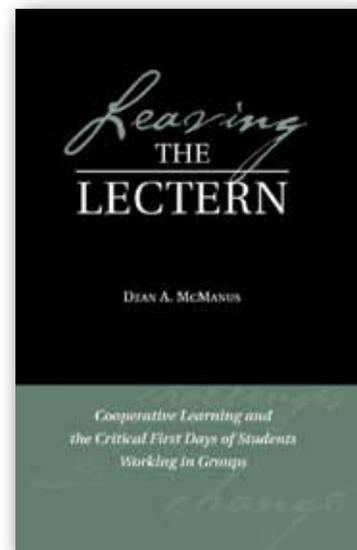
REVIEWED BY TOM GARRISON

Can you remember a moment when the world dropped away and there remained only the teacher, the topic, and yourself? Some combination of events had occurred to block out all distractions—the connections you were seeing were so powerful that you didn't want the time to pass. Your field of view narrowed to encompass only the teacher's face. A clear description of such a moment is contained in one of my favorite books in education, George Leonard's 1968 work *Education and Ecstasy*.¹ Leonard wrote:

Something happens. A delicate warmth slides into parts of your body you didn't even realize were cold. The marrow of your bones begins to thaw. You feel a little lurch as your own consciousness, the teacher's voice, the entire web of sound and silence that holds the class together, the room itself, the very flow of time all shift to a different level. And suddenly it is Christmas morning, with students and teacher exchanging delightful gifts while bells silently chime; the old furniture around the room reflects a holiday gleam; your classmates'

eyes sparkle and snap like confetti and you realize with the certainty of music how rare and valuable each inhabitant of that room has become, has always been. Or you find yourself trembling slightly with the terror and joy of knowledge, the immensity of existence and pattern of change. And when it ends and you must go, you reel from the room with flushed face, knowing you will never again quite be the same. You have learned.

A little overwrought? Well, no. Our beloved research projects and analyses are only half of the academic exercise. Transmitting the information and teaching its meaning is the other half. Fail in one and you fail in the other. Don't believe me? Think about this: Did you once take an undergraduate course that was so stupefyingly dull, so mind-numbingly boring, and so poorly organized that it effectively destroyed an entire field of learning for you? For me it was American history. An aggressively bad presentation by a brilliant specialist distorted my view of that splendid story for a decade. I recovered my love for our journey as a country when I took our young daughter to Williamsburg and reconnected to the sweep of our past. Now, think about the other side of the coin: You are doing what you're doing because you had an inspiring teacher. He or she



started you on this path. You know who I'm talking about—the memory of him or her forms the base of your inspiration to this day.

What about your own efforts in the classroom? Mine are the center of my professional life (research is not a high priority in my particular world). I want my 500 general oceanography students to “know about” the ocean and its connections with history and humanity, stars and organisms, past and future. My lectures are tightly structured, presented in full high-tech glory, interspersed with stories, decorated with personal experiences and bright sights and sounds. Edutainment and rigor combined! Great student reviews! Standing ovation at semester's end! Nobody does it better!

Right. Then why are my test results so dismal? Why do students have a hard time deciding what is important and what isn't? Why doesn't anybody come to see me during office hours? Why are a few of my students disengaged or

¹ Leonard, G.B. 1968. *Education and Ecstasy*. Delacort Press, New York, 239 pp.

UPCOMING BOOK REVIEWS

Satellite Monitoring of Inland and Coastal Water Quality: Retrospection, Introspection and Future Directions
by Robert P. Bukata (CRC Press, 272 pages)

Sounds in the Sea: From Ocean Acoustics to Acoustical Oceanography
by Herman Medwin (Cambridge University Press, 670 pages)

Baroclinic Tides: Theoretical Modeling and Observational Evidence
by Vasiliy Vlasenko, Nataliya Stashchuk, and Kolumban Hutter
(Cambridge University Press, 351 pages)

Computer Modelling in Atmospheric and Oceanic Sciences: Building Knowledge
by Peter Müller and Hans von Storch (Springer, 304 pages)

Down to the Sea for Science: 75 Years of Ocean Research, Education, and Exploration at the Woods Hole Oceanographic Institution
by Vicky Cullen (Woods Hole Oceanographic Institution, 184 pages)

asleep (or, worse, text-messaging) during the crucial phase of my crystalline presentation on geostrophic gyres? Hmmmm. Maybe I'm doing something wrong after all.

And now, here is Dean McManus' book. Imagine, if you will, a premier oceanographer—one of the finest—who abruptly decided his lifetime on the podium had counted for surprisingly little. “Whatever the cause, my teaching in the [senior-level oceanography] course aroused student complaints too serious to ignore: Pick up the pace, cover more material, condense the lectures, drop the attempts at time-consuming class participation, show some enthusiasm.” “...lecturing did not bring me any joy, even when I knew I had done a good job.” He reports that his experience as a teaching professor “...molded me into an organized but boring lecturer who gave confusing exams and overlong lists of assigned reading, but who cared

about whether his students learned the information even though that care was expressed so ineptly that he could not state clearly what he expected of his students.” His deep regard for his students drove him toward an epiphany. He decided that, in good conscience, he could not continue to teach as he always had. He distilled his subsequent experiences into this gem of a book, a work that has caused me—and many others—to examine what we mean by “success” and plot a strategy for change. Lecture as usual? No, not anymore.

McManus' *Leaving the Lectern—Cooperative Learning and the Critical First Days of Students Working in Groups* is not an easy read. The author knows his primary idea is going to be a hard sell. We senior profs are too entrenched; lecturing is too natural to release without a fight. The junior untenured faculty had not better try anything radical. He fights for us—we see his steps. “I could not

ignore the problem. I decided to write letters to the chairs of departments—almost all strangers to me—at 12 universities, asking if I might come and listen to their students.” The outcome? He is reminded of the difficulty students have of learning things that we believe should be easy to master. He finds students don't know how to read a textbook effectively. He hears, over and over, the frustration of the talk-and-test tradition. A plan grows, and McManus actually has the courage to give it a try.

His strategy is to shift from a teaching-centered model to a learning-centered model. Rather than overemphasize the clear presentation of lecture material, he will develop interpersonal skills of questioning, listening, responding and a sensitivity to group processes. Rather than assume all students are self-motivating, he will help students set goals and establish a plan to achieve those goals. Rather than enhancing the learning of content, he will help students interpret content and become lifelong learners. He will turn students into apprentices. He studies the relevant literature (how many of us even know there is an education literature?). He decides self-assessment is practical and preferable to our usual procedures.

McManus adopted a “jigsaw” approach. “Each group of students was assigned a reading or activity that supplied part of the information needed to achieve the goal for that class lesson. After demonstrating to the instructor that they knew the material, the groups were reformed into mixed groups, each consisting of a member from each of the original groups. Each member of the mixed groups then taught the other

members what that student's group had learned, thus combining the information from all the original groups so as to achieve the goals for the class lesson. The instructor caught any mistakes or "oversights." Voila! Was it that simple? Of course not. He underestimated the time necessary for this mode of teaching. He fought departmental tradition. He bumped up against entrenched student expectations of class structure. Mainly, he confronted the "Principle of Economy:" Teach a little material well rather than a lot of material poorly. Something other than just course structure had to go.

Thus began a personal journey best explained by the author himself. His techniques might not work for you (his students were juniors and seniors, oceanography majors). You may not be as amenable to change as he was. But this beautifully annotated book (with copious references to the education literature and probing reflective questions at the end of each chapter) will give you an irresistible nudge, and, as it has me, might push you over the cliff.

McManus ends this splendid exposition with a paragraph strikingly similar in tone to the Leonard excerpt with which I opened this review:

Do you eagerly look forward to your class period, athirst for it to begin, still excited after it's over? If not, why do you settle for a middling experience? Teaching is part of your life. Does your class bring you joy or gladness? If not, why do you settle for receiving less than joy or gladness in what you do? How much better life is when we are excited and joyful in our work!

To which I can only add, "Bravo!"

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Marine Turbulence *Theories, Models, and Observations:* *Results of the CARTUM Project*

Edited by Helmut Z. Baumert, John H. Simpson, and Jürgen Sündermann
Cambridge University Press, 2005, 672 pages, Hardcover: ISBN 0521837898, \$275 US

REVIEWED BY WILLIAM D. SMYTH

Ocean turbulence is a rich and fascinating field of study, both for its own sake and in the service of large-scale circulation and climate modeling efforts. *Marine Turbulence* is a collection of chapters by 53 authors describing results from the Comparative Analysis and Rationalization of Second-Moments Turbulence Models (CARTUM) project. The project

was funded by the European Union and took place over three years (1999–2001). Although intended only as a summary of CARTUM, which focused on the practical goal of reconciling closure models with ocean observations, the book provides a remarkably comprehensive overview of the present understanding of ocean turbulence.

The book is thick (630 pages, letter size) and detailed. Auxiliary information, including selected datasets and source codes for turbulence models, is provided on a compact disc. Color illustrations are regrettably absent, no doubt to help control the cost, but color versions of some figures are provided on the CD. Most of



the shaded images could have been made much clearer had they been designed for black and white rendering in the first place. Unfortunately, images intended for color rendering were rendered in black and white, often making it impossible to distinguish high and low values without reference to the CD.

The book is divided into eight sections, each of which contains about half a dozen articles plus a prologue and an