The Role of the Teacher

Cooper, M. M., Cox, C. T., Nammouz, M. and Case, E. “An Assessment of Collaborative Groups on Students’ Problem-Solving Strategies and Abilities.” Journal of Chemical Education, 2008, 85 (6), 866-872. --found that most students’ problem-solving strategies and abilities can be improved by working in short-term collaborative groups

Hockings, S. C., DeAngelis, K. J., and Frey, R. F. “Peer-Led Team Learning in General Chemistry: Implementation and Evaluation.” Journal of Chemical Education, 2008, 85 (7), 990-996. --students participating in weekly peer-led study groups out performed students not in study groups on three out of four measures of academic performance

McCreary, C. L., Golde, M. F., and Koeske, R. “Peer Instruction in General Chemistry Laboratory: Assessment of Student Learning.” Journal of Chemical Education, 2006, 83 (5), 804-810. --participation in undergraduate peer-led lab sessions enhanced learning for students as compared with students in conventional labs taught by teachers

Silverthorn, D. U. “Teaching and Learning in the Interactive Classroom.” Advances in Physiology Education, 2006, 30, 135-140. --uses a system that holds students responsible for learning some content on their own

Thiel, T., Peterman, S., and Brown, B. “Addressing the Crisis in College Mathematics: Designing Courses for Student Success.” Change, 2008, July-August, 44-49. --redesigned a developmental algebra course with fewer lectures and more lab time with individual instruction. Student success in the course went from 55% to 75% with no decrease in course rigor.

The Balance of Power

DiClementi, J. D. and Handelsman, M. M. “Empowering Students: Class-Generated Rules.” Teaching of Psychology, 2005, 32 (1), 18-21. --gave students a set of categories (late arrival, sleeping in class, use of cell phones) and let them develop classroom policies

Litz, R. A. “Red Light, Green Light and Other Ideas for Class Participation-Intensive Courses: Method and Implications for Business Ethics Education. Teaching Business Ethics, 2003, 7 (4), 365-378. --lets students have some control over how they will participate in class

Benjamin, L. T. “Setting Course Goals: Privileges and Responsibilities in a World of Ideas.” Teaching of Psychology, 2005, 32 (3), 146-149 --sees a possible role for students in setting course goals or in sharing goals with the instructor

Singham, M. “Moving Away from the Authoritarian Classroom.” Change, May/June 2005, pp. 51-57. --finds the authoritarian language and structure of syllabi symptomatic of the breakdown of trust between teachers and students; describes his experience with a redesigned syllabus in a large physics course

Singham, M. “Death to the Syllabus.” Liberal Education, 2007, 93 (4), 52-56. --further analysis of the role of syllabi in preventing and promoting learning
**The Function of Content**


--restructuring this large biology course “led to significant improvement of self-reported student engagement and satisfaction and increased academic performance.” (p. 203)


--using a robust empirical design documents that most of the knowledge gained in a course for majors is lost within two years


--50% of the lectures were replaced with POGIL activities, performed in class by students working collaboratively in small groups. Overall course scores increased from means of 76% to 89%.


--100-student sections achieved better grades on standard midterms, developed higher level thinking skills and had more positive attitudes toward the course


--a wonderfully written piece exploring how teachers and students don’t connect to content the same way


--substituted one lecture per week with a guide-inquiry discussion and found covering less content did not result in less learning


--study explored the use of cramming as reported by marketing students and looked at how effective cramming was in terms of both short and long term retention.

**The Responsibility for Learning**


--great list of ten specific ways teachers can encourage students to step up to the plate


--after a telling assessment revealing just how few students were actually doing the reading, devised an interesting assignment which did as the title claims


--insightful analysis of student reading skills and how they can be developed. Objects to quizzes and proposes an assignment that helps develop college level reading skills.
--get example of an assignment design that gets students doing the reading at the same time it develops college-level reading skills

--describes an assignment that gets students doing the reading before they come to class and participating in discussion during class

**The Processes and Purposes of Evaluation**

--uses a comprehensive lit review to generate the most common assessment criteria for peers; also includes two excellent peer assessment forms, plus much other useful information

--some especially creative assessment techniques that respond constructively to exam anxiety

--a unique system lets students grade homework and exams at the same time it keeps them honest

--tracks the evolution of a contract grading scheme across a four-year period with 473 students in 22 classes and at three different universities

--great collection of prompts that improve the quality of feedback students provide each other on papers, projects and presentations

**Implementation Issues**

--honors students resisted approaches that required them to be more self-directed

--close to a workbook, this resource proposes a practical system for implementing incremental changes that make courses more learner-centered.

--very good on responding to student resistance

--recounts first attempts to implement learner-centered approaches and explores why they failed

--illustrates how inductive methods (like inquiry- and problem-based approaches, among others) have been implemented in the sciences and identifies many helpful resources
--a kick-in-the-butt piece if something is needed to motivate change in the direction of learner-centered teaching

--great advice on implementing learner-centered approaches starting with how the course is designed

**Good Summaries of Research and Resources on Learner-Centered Approaches**

--clear descriptions of three group learning models: problem based learning, process-oriented guided inquiry and peer-led team learning. References relevant research and resources.

--identifies 10 research-based learning principles that enhance long-term retention and transfer

--an excellent review of the research with special emphasis on evidence supporting active learning in the sciences

--a comprehensive and compelling analysis of the impact of active learning experiences