

Associated Colleges of the Chicago Area at the University of St. Francis
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HOW WE DEFEAT OURSELVES: DYSFUNCTIONAL ILLUSIONS OF RIGOR

Key Lessons From The Scholarship of Teaching & Learning

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From reading the pedagogical literature and watching my own classes, I slowly realized that much of my pedagogy, though standard practice, was having the opposite of its intended effect. Pedagogical practices that are commonly assumed to demand more from students and thereby increase their achievement actually seemed to interfere with their success. Thus began a search for changes that would increase the number of students whose performance earned an A grade in my courses without lowering the expectations. Key moves have included more explicitly developmental assignments, expanded use of discussion, taking more responsibility for having the students prepared for discussion, and modifying conventional policies on re-taking exams. These changes will be summarized and the audience will be invited to explore their relevance to their own interactions with students. These and other changes will be summarized and tied to the scholarships of teaching and learning (and to its various genres). The audience will be invited to explore the relevance to their own interactions with students and to their own scholarship of teaching and learning.

"The important point ... is that all professionals—including ... faculty members and students affairs staff—are loaded down with assumptions, expectations, customs, routines, and personal preferences that make it difficult to see and do things differently."

-- G. Kuh. Lessons from the mountains. *About Campus* May-June 1998:16-21.

OPENING CASES & QUESTIONS:

A: Calculus. Research University. 60% of African-Americans D, F or W.

Survey of Entire Faculty--How can this be?

How would faculty you know explain?

B: Harvard. Your job is to keep students from flunking out.

What would your faculty anticipate to be the problems?

C: Your institution. Low grades. *How do faculty you know explain?*

8 DYSFUNCTIONAL ILLUSIONS OF RIGOR

1. Hard courses weed out weak students: When students fail it is due mainly to inability, weak preparation or lack of effort.

• R.E. Fullilove & P.U. Treisman. 1990. "Mathematics Achievement Among African American Undergraduates at the University of California, Berkeley: An Evaluation of the Mathematics Workshop Program." *Journal of Negro Education* 59(3): 463-478. [Impetus was finding that 60% of the African Americans who took calculus were unsuccessful (D/F/W) and that math entry scores inversely correlated with grade. Interviews etc. delineated study approaches that distinguished the more successful groups of students. These (group-study) approaches, when incorporated as requirements for the workshop program, dropped the D/F/W rate to 4%. For additional discussion of faculty preconceptions that had to be overcome, see [P.] U. Treisman. 1992. "Studying Students Studying Calculus: A Look at the Lives of Minority Mathematics Students in College." *College Mathematics Journal* 23: 362-372.

2. A good clear argument in plain English can be understood by any bright student who applies herself. [v Many students, even if quite bright, are developmentally unable to understand contextually constrained conclusions.]

• J. D. Herron. 1975. Piaget for Chemists: Explaining What "Good" Students Cannot Understand. *Journal Chemical Education* 52:146-150. Important for all quantitative disciplines.

• Wm. G. Perry, Jr. [1970] 1998. *Forms of Intellectual and Ethical Development in the College Years, A Scheme*. [1998. New introduction by Lee Knefelkamp.] Jossey-Bass. The impetus here was the observation that students could flunk out of Harvard despite working quite hard at learning the course material. The longitudinal design used extensive interviews with students at the end of each of their four undergraduate years. Patterns of intellectual development were inferred and checked for inter-judge reliability.

• C.E. Nelson. 1999. "On the Persistence of Unicorns: The Tradeoff Between Content and Critical Thinking Revisited." In B.A. Pescosolido and R.Aminzade, Eds. *The Social Worlds of Higher Education: Handbook for Teaching in a New Century*. Pine Forge Press.

• M. B. Baxter Magolda. 2001. *Making Their Own Way: Narratives for Transforming Higher Education to Promote Self-Development*. Stylus

3. Traditional methods of instruction provide proven effective ways of teaching content to undergraduates." Modes which pamper students teach less content.

• E.T. Terenzini & P.T. Pascarella. 1994 Living with myths: Undergraduate education in America. *Change*. Jan/Feb 1994: 28-32"...The evidence we reviewed is clear that the lecture/discussion mode is not ineffective... But the evidence is equally clear that these conventional methods are not as effective as some other far less frequently used methods. Long trails of research suggest that certain individualized instructional methods are consistently more effective in enhancing subject matter learning... *These more effective approaches emphasize small, modularized units of content, student mastery of one unit before moving to the next, immediate and frequent feedback to the students on their progress, and active student involvement in the learning process.*"

4. If we cover more content, the students will learn more.

• M.D. Sundberg & M.L. Dini. 1993. Science majors vs nonmajors: Is there a difference? *Journal of College Science Teaching*. Mar/Apr 1993:299-304. [Does covering more teach more? Both courses used traditional pedagogy and multiple instructors, but had different levels of 'coverage.' Assessed with the ACT AP Biology exam (was already the exemption exam for both courses. Despite much higher drop rates for the majors course: "The most surprising, in fact shocking, result of our study was that the majors completing their course did not perform significantly better than the corresponding cohort of nonmajors."] [Less wasn't more, without pedagogical change, but more wasn't more either.]

• I.J. Russell, W.D.Hendricson & R.J. Herbert. 1984. "Effects of lecture information density on medical student achievement." *Journal of Medical Education* 59:881-889. [Three different lectures on the same subject. 90% of sentences in the high-density lecture disseminated new information as did 70% in the medium and 50% in the low. Remaining time used for restating, highlighting significance, more examples, and ties to student's prior experience. Students randomly distributed into the 3 groups (no significant differences in prior GPA or on knowledge base pretest). Students in low treatment learned and retained lecture information better.] [Here less is more.] [from C.C. Bonwell]

5. Traditional methods of instruction are fair to a wide range of diverse students of good ability. [v Favor rich white males]

- R.E. Fullilove & P.U. Treisman. 1990. See above.
- M. Rose. 1989. *Lives On The Boundary: A Moving Account Of The Struggles And Achievements of America's Underclass*. Penguin Books.

6. Students should come to us knowing how to read, write and do essay and multiple-choice questions. [v Each discipline has its own discourse conventions that only great preparatory programs teach]

• K.A. Bruffee. 1984. Collaborative learning and the "conversation of mankind." *College English*, 46 (7), 635-652.

• G.G. Colomb. 1986. *Disciplinary Secrets And The Apprentice Writer*. Institute for Critical Thinking, Montclair State College.

7. It is essential that students hand in papers on time and take exams on time. Giving them flexibility and second chances is pampering them. [v Give limited time flexibility and a limited number of repeats on exams]

• C.E. Nelson. 1996. Student Diversity Requires Different Approaches to College Teaching, Even in Math and Science. *American Behavioral Scientist* 40:165-175.

8. Classroom instruction is better than distance education.

• T. R. Russell. 1997. Explaining, Exploring [and] Understanding the No Significant Difference Phenomenon. *Adult Assessment Forum*. Winter 1997:6-9. ["...scholars have been able to find no significant difference resulting from the use or lack thereof of technological means of delivery." "No matter how it is produced, how it is delivered, whether or not it is interactive, low tech or high tech, students learn equally well...even though students would rather be on campus with an instructor if that were a real choice." *[If we don't like this conclusion we should either document the differences or, if possible, change classroom pedagogy so that it is better than technology can provide.]*

• T. R. Russell. 1999. *The No Significant Difference Phenomenon*. Office of Instructional Telecommunications. N. Carolina State University. Summaries of 355 studies showing no significant difference and 13 studies that found a significant difference, usually in favor of technology at <http://cuda.teleeducation.nb.ca/nosignificantdifference/>

ADDITIONAL RESOURCES

• Carnegie Academy for the Scholarship of Teaching and Learning. <http://www.carnegiefoundation.org/CASTL/highered/index.htm>

• Scholarship Of Teaching & Learning at Indiana University Bloomington. <http://www.indiana.edu/~sotl/>

• C.E. Nelson.. 2000. "How Could I Do Scholarship Of Teaching & Learning?: Selected Examples of Several of the Different Genres of SOTL." 3 pp. On CD accompanying: P. Hutchings (Ed.) *Opening Lines: Approaches to the Scholarship of Teaching and Learning*. Carnegie Foundation for the Advancement of Teaching. <http://php.indiana.edu/~nelson1/GENRES.html>