

Lecture vs. Active Learning: Reframing the Conversation

Sunday Morning Plenary, Teaching Professor Conference

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Resources

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Research Highlights on Use of Lecture and Active Learning Approaches

275 econ faculty teaching principles courses reported spending 70% of the time lecturing and 20% leading class discussions.

Goffe, W. L., and Kauper, D., (2014). A survey of principles instructors: Why lecture prevails. *Journal of Economic Education*, 45 (4), 360-375.

722 physics faculty members surveyed about 24 research-based instructional strategies (coop learning, peer instruction, activity based tutorials), 12% no knowledge of any of them. Of faculty who tried one or more, 33% no longer using them, 33% low were users, using one or two and 33% high users using three or more

Henderson, C., Dancy, M., and Niewiadomska-Bugaj, M., (2012). Use of research-based instructional strategies in introductory physics: Where do faculty leave the innovation-decision process? *Physical Review Special Topics – Physics Education Research*, 8, 1-15.

Of 2,000 geoscience faculty, 66% reported using lecture in introductory courses nearly every class. Less than 1/3 used interactive techniques other than lecture with questions or demonstrations.

Macdonald, R. H., Manduca, C. A., Mogk, D.W., and Tewksbury, B. J. (2005). Teaching methods in undergraduate geoscience courses: Results of the 2004 On the Cutting Edge Survey of U. S. faculty. *Journal of Geoscience Education*, 53 (3), 237-252.

197 engineering department heads were asked about student-active pedagogies; 82% were aware of the pedagogies listed, 47% reported that faculty in the department had adopted them.

Borregim N., Froyd, J. E., and Hall, T. S. (2010). Diffusion of engineering education innovations: A survey of awareness and adoption rates in U. S. engineering departments. *Journal of Engineering Education*, 99 (3), 185-207.

[Note: these four are discussed in more detail in an article on Instructional Techniques that appears in the March, 2016 issue of the Teaching Professor]

A survey of 744 full and part time faculty teaching at eight technical colleges in Georgia found that lecture was the most used of 18 different instructional strategies with 92.8% of respondents reporting they used it in four or more of the last 10 class sessions. 52.6% said they used it in all 10 of the last 10 class sessions. Full group discussion was used in 7.55 of the last 10 sessions.

Smith, D. J. and Valentine, T. (2012). The use and perceived effectiveness of instructional practices in two-year technical colleges. *Journal on Excellence in College Teaching*, 23 (1), 133-161.

[Note: this research is discussed in more detail in an article on Instructional Techniques that appears in the March, 2013 issue of the Teaching Professor]

The Current Conversation

Here are references and links that illustrate the current conversation about lecture and active learning. Note that most of the articles and posts generated a significant number of comments and in those exchanges, many more perspectives on lecture and active learning emerge.

“In Defense of Lecture” by Alex Small, published in the *Chronical of Higher Education*, May 27, 2014. <http://chronicle.com/article/In-Defense-of-the-Lecture/146797/>

“Are Lectures Unfair?” blog post by Annie Murphy Paul, September 13, 2015.

Link: http://www.nytimes.com/2015/09/13/opinion/sunday/are-college-lectures-unfair.html?_r=0

Author’s Website providing additional references:

<http://anniemurphypaul.com/?version=meter%20at%200&module=meter-Links&pgtype=article&contentId&mediaId&referrer=https%3A%2F%2Fwww.google.com%2F&priority=true&action=click&contentCollection=meter-links-click>

“In Defense of Continuous Exposition by the Teacher” blog post authored by Derek Bruff, September 15, 2015. <http://derekbruff.org/?p=3126>

“Lecture Me. Really.” by Molly Worthen, a *New York Times* op-ed piece, October 17, 2015. <http://www.nytimes.com/2015/10/18/opinion/sunday/lecture-me-really.html>

Here are some responses to the Worthen piece.

- Josh Eyler, blog post October 20, 2015. <https://josheyler.wordpress.com/2015/10/20/active-learning-is-not-our-enemy-a-response-to-molly-worthen/>
- “Step Away from the Lectern” blog post Maryellen Weimer, the Teaching Professor Blog, November 4, 2015. <http://www.facultyfocus.com/articles/teaching-professor-blog/step-away-from-the-lectern/>
- “A Lecture from the Lectured” by students in a writing course was published in the January 4, 2016 issue of *The Chronicle of Higher Education*. <https://chroniclevitae.com/news/1235-a-lecture-from-the-lectured>

“Professors Shouldn’t Teach to Younger Versions of Themselves” by Rebecca Schuman in *Slate*, October 21, 2015.

http://www.slate.com/articles/life/education/2015/10/professors_shouldn_t_only_teach_to_younger_versions_of_themselves.html

More Quotations for Consideration and Discussion

“Tired descriptors like “sage-on-the-stage” and “guide-on-the-side” have permeated the pedagogical literature for over two decades now even though they greatly oversimplify what really takes place in the classroom. Most teaching occurs on a continuum between these two extremes.”

--James Ricky Cox and David Yearwood, in the *Teaching Professor*, Jan 2013

“I have never believed that there was intrinsic damage being done to students in what has been called the ‘sage on the stage’ model of teaching. I don’t think it’s always bad to listen to an expert talk about what she knows best, and I don’t think that the discussion format is inherently better than the lecture format merely because the latter allows the students to express their opinions. On the contrary, I think that a truly great lecturer has the capacity to change a student’s life, and I think that there is something valuable in students listening to a person who has an effortless command of a subject, in seeing the kind of dedication and erudition a fine lecturer embodies.” (p.460)

--S. Foote, “Amateur Hour Beginning in the Lecture Hall.” *Pedagogy*, 2010, 10 (3).

“Listening continuously and taking notes for an hour is an unusual cognitive experience for most young people. Professors should embrace—and even advertise—lecture courses as an exercise in mindfulness and attention building, a mental workout that counteracts the junk food of nonstop social media.”

--Molly Worthen “Lecture Me. Really.” NY Times Op-Ed., October 17, 2015

“In the modern world, the original function of the classroom, simple information transfer, has been replaced by books and the Internet. The classroom has now become the best opportunity for students to practice the desired thinking while getting timely feedback to support learning. This feedback comes from interactions with their fellow students and teachers.” (p. 204)

--C. Weiman and S. Gilbert, “Taking a Scientific Approach to Science Education, Part II- Changing Teaching,” *Microbe*, 2015, 10 (5).

“My experience is that students are asking for lecture, not because they learn best that way, but because it is easier for them, and comfortable, while active learning takes more effort, but they get a bigger reward. I think most classes are passive learning, listening to exposition. So by the time the students graduate high school and experience a small amount of college courses that use active learning, the student has a hard time breaking out of the mold of passive learning.”

--Ian August, a comment in response to Derek Bruff’s September 15, 2015 blog post

One of the problems with lectures. . . is that we *don't know* what's going on in students' heads during the exposition. . . We're teaching blind, in a sense. And teaching blind is as reckless as driving in the dark without headlights on. We often equate "active learning" with activity on the student's part, but the important flip side is that the teacher must be an active participant too, evaluating whether in fact students are actually learning what we expect them to be. Not only does lecturing promote passive learning on the students' part; it promotes passive teaching too. In a new NYT op-ed, the writer [Molly Worthen] suggests that because she's "hot and sweaty" after giving a vigorous lecture, she has somehow been an active teacher. She conflates her effort performing with her students' efforts engaging with the material. It's a tragic mistake, and it underscores exactly how much lecturing makes the professor's ego the center of the class.

--Mark Sample, a comment in response to Derek Bruff's September 15, 2015 blog post

"Many of your students may have experienced only traditional lecturing before they show up in your class. If you suddenly plunge them into active learning with no preparation, their assumption may be that you're either playing some kind of game with them or conducting an experiment with them as the guinea pigs, neither of which they appreciate, and you may experience some vigorous pushback." (p. 122)

--Rich Felder and Rebecca Brent, *Teaching and Learning Stem: A Practical Guide*, 2016.