Sarah Anderegg

From: Jonathan Eldridge
Sent: Monday, November 20, 2023 9:02 AM
To: Jonathan Eldridge
Subject: Fall 2023 Faculty Information & Updates, Volume XVI
Attachments: 5 Ways to Ease Students Off the Lecture and Into Active Learning.pdf; COM-Cupboard Bookmark.pdf; Which Is Better Active Learning or Lecture.pdf

Dear College of Marin Faculty:

Please note the attached information and the links below relating to the COM Cupboard for the remainder of this semester. Please share with your students.

Also attached are two articles on active learning versus lecturing. One discusses how much more research is needed to understand the effects of each method of teaching on success rates and the types of considerations faculty should ponder when determining how best to convey information to students. The other shares several ways to get students engaged in active learning—but acknowledges students are the ones who may resist moving away from a lecture format, for a variety of reasons. Interesting stuff all around!

I hope you get to enjoy time with loved ones this long holiday weekend and refresh for the end-of-the-semester push on the other side!

Jonathan

COM Cupboard Update

I am wishing everyone a smooth transition from fall to winter as we wrap up fall 2023. I would like to update you all about the closures of the food distribution and IVC food pantry for winter and when it resumes in the new year

Expect for the food distribution to be closed for November 22. We plan to have the food distribution for November 29 and December 6.

I do want to note that December 6 will be the last food distribution of the semester. It will **resume on January 31st**.

For IVC food pantry, we plan to be closed for November 21 and plan to be open for November 28th and December 5, but **remain closed until January 23rd.**

I attached a bookmark with other food pantries within the Marin and East Bay area, this is what we will be distributing to students during the last two days of the food distribution and pantry.

For any other updates, please visit: https://ss.marin.edu/comcupboard

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Students outside Marin County: Call 211 from your phone or visit 211bayarea.org for the nearest food availability in your area. Students in Marin County: Find locations for food availability nearest you at FOOD LOCATOR If you have an

additional need beyond food, please submit a COM Care report. While we cannot guarantee that we will be able to fulfill your request, we will do
ss.marin.edu

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5 Ways to Ease Students Off the Lecture and Into Active Learning

Lecturing endures in college classrooms in part because students prefer that style of teaching. How can we shift that preference?

By Jeremy T. Murphy

JULY 18, 2023

My course evaluations are in. They are mostly encouraging — except for the ones that say I should lecture more.

"Lessen the amount of reading per week and just lecture more," reads one comment. Another student laments that there isn't enough note-taking in class. Still other students want more "key terms" and "slides." And another reports that, while they learned a great deal in my course, they wish there had been "less discussion and more instruction."

The traditional lecture endures as the default instructional mode of many postsecondary classrooms. That remains the case despite evidence that exhaustive exposition from instructors tends only to benefit a particular type of student. It's true despite an ever-growing research base that showcases the payoff of active learning. That term refers to ambitious instructional practices that prioritize collaboration, discussion, and problem-solving in college teaching. By authentically applying what they have learned, students in an active-learning classroom are not mere recipients of knowledge but engaged participants.

Why does the traditional lecture persist? For one thing, faculty members seldom enter the college classroom having had serious instructional training. Many of us have had few sustained opportunities to broaden our instructional designs. In the absence of such training, we rely on memories of our own past instructors. We teach as we were taught, goes the adage. If lectures dominated our classroom experiences as students — and chances are, they did — we, too, may retreat to our lecterns and hold forth.

But that is only half the story. The course evaluations I highlighted above add a plot twist: Plenty of students are Team Lecture. And such students help reinforce the idea that the traditional lecture should reign supreme in the college classroom.

A case in point is a 2019 study led by Louis Deslauriers, director of science teaching and learning in arts and sciences at Harvard University. Researchers randomly assigned college students in a physics course to either an active-learning classroom or a passive-learning one relying on lectures. Instructors in both taught the same material. The study found that students in the lecture classroom believed that they had

learned more than those in the active one, but the active-learning students actually demonstrated higher mastery on an assessment given to both groups.

Those astonishing findings highlight how deeply ingrained undergraduate perceptions about college learning can be — and how difficult the resistance from students can be for a faculty member who wants to lecture less and use active learning more in the classroom.

Other research adds to this picture. A 2011 study of community-college students, for example, found that they widely "interpreted the absence of a lecture as the absence of instruction." Other studies provide further evidence of student resistance to active-learning pedagogies — and evidence that pushback from undergraduates can prompt instructors to abandon such practices altogether. Maybe the puzzling appraisals I received on my course evaluations are not so puzzling after all.

What can we do? Here are five considerations I'll be following this coming fall in response to that nagging "less discussion, more instruction" evaluation.

Lecture … sparingly. This column shouldn't be read as a call to throw out the lecture altogether. Lectures have value. Lectures can efficiently convey a set of ideas to students. Lectures allow us to model curiosity, showcase our original work, or grab students' interest through a clear and captivating narrative.

But classrooms are especially unique because they are, by nature, crowded places. They are a wonderful jumble of personalities, lived experiences, and different forms of expertise. By valuing monologue over dialogue, continuous lecturing fails to capitalize on this core aspect of classroom life.

Moreover, it overlooks the fact that students are constantly processing, and they can make better use of lecture material when given focused opportunities to apply it. By lecturing sparingly, you can hold on to the benefits of traditional lectures, satisfy some learners' preference for exposition from an instructor, and, at the same time, make room for active learning.

Routinely ask how the course is going. Keep a pulse on how students are experiencing active-learning practices as they unfold in real time. By establishing a feedback loop, you can collect evidence regularly, spot patterns, and weigh their answers in your planning. Hearing students out over the course of a semester offers you an evolving read of whether particular activities or teaching strategies are effective (or not). Immediate feedback allows you to respond to concerns and confusions before it's too late.

To be sure, students may be less apt to offer candid feedback during the semester (when they're worried about their grades) than after a course has formally concluded. But the stronger and more frequent your feedback loop, the more willing students may be to tell you how they really feel, and the better able you'll be to explain why you're taking this approach and bring students on board with it, or adjust if you hear that it's just not working.

Be transparent. Faculty members sometimes operate in an aura of mystique. We have the knowledge; students don't. We impart that knowledge in a particular way, and we think our methods require no introduction. But if students do not understand how a particular learning design helps them arrive at a particular outcome, they tend to be less invested in a course.

Why not pull back the curtain and make your pedagogical choices known? Take a few minutes to share directly with students the research that has influenced your teaching practices. Explain your thought processes for specific activities or assignments.

In my own teaching, I engage students in a variety of discussion configurations that I leverage to reach specific objectives. Had I been more transparent about my approach last spring, at least some of my students might have better understood its purpose and value. They might have also seen how class discussion is, in fact, an evidence-based form of instruction.

Manage student anxieties. Active learning flattens the teacher-student hierarchy that is characteristic of so many college classrooms. The resulting environment affords students more power and ownership over their learning, but that newfound control can be anxiety-inducing. A student-centered classroom may ultimately offer more educational benefits than a teacher-centered one; nevertheless, students may prefer the latter precisely because it poses fewer risks and demands less of them.

If you position students at the center of your course design — with activities that require their active participation, not just listening and note-taking — then you must be willing to manage their anxieties on this front. By that I mean:

- Meet with students one on one to discuss their concerns and guide them in understanding how to participate.
- Scaffold assignments. Start small and, over the semester, progressively build toward more demanding learning experiences.
- For activities that emphasize group work, consider having students convene with the same sets of peers for extended periods, so they get comfortable working together through challenging tasks.
- On a larger scale, take steps to foster a classroom environment in which students feel safe going out on a limb and know you will support them when they do.

Unlearn. By the time students enter college they have spent thousands of hours in classrooms. Some of those hours may have prepared them well for ambitious learning designs, but decades of research in K-12 settings has also demonstrated that the road to active learning has been a rocky one. Too often, the most familiar classroom is one with desks in rows and eyes on the teacher. Many students come to us having mastered that arrangement.

You may have to help your students unlearn some of the schooling practices into which they have been long socialized. They may have to unlearn that the instructor is an all-knowing authority, that a peer is no authority at all, that feeling uncomfortable or frustrated means they aren't learning.

Recall the physics experiment that I described earlier. Compared with students in the lecture classroom, students in the active-learning one believed they had learned less. The assessment, however, told a different story. Deslauriers and his colleagues hypothesized that students felt that way because they struggled more in the active-learning classroom: "The cognitive effort involved in this type of instruction may make students frustrated and painfully aware of their lack of understanding, in contrast with fluent lectures that may serve to confirm students' inaccurately inflated perceptions of their own abilities."

To help students unlearn, foster candid dialogues in class. Ask them to think critically about their past learning experiences and uncover where their expectations — about college learning, in particular — come from. Try to incorporate focused reflections and metacognitive exercises into your lessons or after specific activities.

Shifting your classroom away from a lecture-heavy style is a process. It may introduce growing pains for instructors and students. But by taking purposeful steps like these, we can better acclimatize students to active learning and wean them off lectures.

Jeremy T. Murphy is an assistant professor of education at the College of the Holy Cross. He is a co-author of a new book, *Instructional Moves for Powerful Teaching in Higher Education,* published in March 2023 by Harvard Education Press.

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Tuesdays, 8:30 am – 11 am

Ritter Center
16 Ritter Street, San Rafael
Mondays, 8:30 am – 4:30 pm
Wednesdays, 9:30 am – 4:30 pm

Holy Innocents
2 Tamalpais Drive, Corte Madera
Thursdays, 3:45 pm – 5:45 pm

Novato Community of Christ
375 Calle Arboleda, Novato
Wednesdays, 3:30 pm–5:30 pm

Novato Community Clinic Health Hub
6100 Redwood Blvd., Novato
Thursdays, 1:30 pm – 3:30 pm

All West Contra Costa/ Richmond Food Pantry
2369 Barrett Ave., Richmond
(925) 676-7543

North Richmond Missionary Baptist Church Food Pantry
1427 Fred Jackson Way, Richmond
(510) 232-7751

Central City Ministries Food Pantry
1230 Bissell Ave., Richmond
(510) 215-0227

New Gethsemane COGIC
2100 Roosevelt Street, Richmond
Dial the food bank at (510) 620-9628 for hours. May have brown bag lunches, commodities, and more.

Which Is Better, Active Learning or Lecture? It's Not So Simple.

By Beckie Supiano
NOVEMBER 16, 2023

Students whose STEM courses are taught using active learning perform better than those taught with traditional lectures. That was the top-line finding of a widely cited 2014 meta-analysis, and it has been borne out in many other studies since. While research suggests that lecturing remains the dominant form of STEM instruction, the studies on active learning have bolstered high-profile calls for change that a growing number of instructors have taken to heart in recent years.

A new paper suggests, however, that those studies are not as solid, nor their findings as clear-cut, as active-learning proponents would like. Its lead authors, Amedee Marchand Martella, a National Science Foundation postdoctoral research fellow in psychological and brain sciences at the University of California at Santa Barbara, and her father, Ron Martella, a professor in the College of Education at the University of Colorado at Colorado Springs, had long doubted that the evidence on active learning was strong enough to support the kinds of blanket directives — like "just stop lecturing," — they were hearing.

The paper, "How Rigorous Is Active Learning Research in STEM Education? An Examination of Key Internal Validity Controls in Intervention Studies," was published in *Educational Psychology Review.* It documents their examination, with several co-authors, of the studies included in the 2014 meta-analysis and a sample of more recent studies. The authors checked each study to see if it met 12 internal validity controls, like whether the students in the active-learning and lecture conditions were sufficiently comparable and whether the two conditions took place at the same time. The authors determined that high percentages of the studies missed each control, and none met all 12 controls.

This work, the authors argue, shows that better research is needed to truly understand the impact of active learning. But they also argue that comparing active learning to a traditional lecture isn't really asking the right question. That's because most of the instructors who use active-learning techniques also lecture — sometimes for a good portion of class time, as studies indicate. But even this loose idea of active learning, Ron Martella says, is more clearly defined than the category "traditional lecture." He recalls taking an economics course in which the professor stood with his back to the class the entire time he was talking and writing on the board. But that isn't what most lecture-heavy faculty members are doing.

The message to professors, he thinks, should be more nuanced than simply asking them not to lecture. "I'm telling you after being a professor for over 30 years, most people aren't going to totally dump lecture, and no longer lecture again and only do active learning," he says.

Amedee Martella, whose background is in cognitive psychology and who does applied research in education, says she thinks active learning is good. By that, she means it's important for students to

construct knowledge, integrate new knowledge with prior knowledge, and organize information in their memory. But she argues that either active learning or a more passive lecture can lead students to do those things.

The paper calls for more internally valid and more specific studies that investigate how best to use active learning and lecturing, together.

Mixed Reactions

So, what does this paper mean for the researchers who study active learning, the faculty developers who encourage it, and the professors trying to determine the most promising way to teach?

Scott Freeman, the lead author of the 2014 meta-analysis, wrote in an email that there is a need for better research in the field, but he stood by his team's work. "Many of their points are well-taken: every meta-analyst — no matter the field — tears their hair out about the flaws they see in the studies they are trying to extract interpretable data from," he wrote. "So in that sense I very much endorse the team's conclusion that we, as a research community, can do better when it comes to classroom-based research in higher education. But I stand by the criteria we used to screen admissible studies for our 2014 paper and the data and conclusions that resulted, which appear consistent with the subsequently published work that the Martella et al. group analyzed."

To Regan A.R. Gurung, a professor of psychology at Oregon State University, the Martella paper underscores that "research in the classroom is really tough." These studies did not meet all 12 internal validity controls, but research rarely does, says Gurung, who teaches research methods. This evidence, says Gurung — who is also associate vice provost and executive director of Oregon State's Center for Teaching and Learning — "is still enough for us to say to an instructor, Really try and do some more active learning."

He offers an analogy: "We know so little about sleep. But we still say, Get some sleep." There are clear benefits, even though we're still discovering why.

It's worth remembering the broader context here, says Daniel Reinholz, an associate professor of mathematics and statistics at San Diego State University whose forthcoming book provides equitable-teaching strategies for college mathematics instructors. There may be many unanswered questions about active learning in higher ed, but those questions don't live in a vacuum. There is still a lot of other, solid evidence on how people learn, says Reinholz. "The research base around this has been really well established in educational psychology and K-12 education for many decades."

It's intuitive, Reinholz says, that people learn by practicing: Think about how someone learns a musical instrument, or a sport. "If we look at studies from educational psychology coming out of tightly controlled laboratory settings, meeting the internal validity controls that one would care about, it's really well established that simply studying more or re-reading something is not the best way to learn

it." What works is practicing, especially when there's feedback. "Those studies have been replicated thousands if not tens of thousands of times, so there's really no debate about that research."

When it comes to classroom studies, Reinholz adds, there's much more funding for work in K-12 than in higher ed. That means the K-12 literature has a lot more of the "multi-site, randomized, controlled interventions" that provide the strongest evidence. Classroom studies are still difficult, Reinholz notes, but the literature is still pretty clear that "when students get to participate, it helps them learn." There are several reasons for this: Explaining something and getting feedback both promote learning, and participating also validates a student's sense of belonging as a learner.

For all these reasons, the Freeman meta-analysis simply demonstrated that students learn in higher-ed STEM courses the same way people learn in general, Reinholz says. "Folks in the K-12 realm already knew that."

The new paper didn't really address the literature on active learning in higher-ed STEM courses on its own terms, says Lindsay Wheeler, senior associate director of the Center for Teaching Excellence at the University of Virginia. Some of those studies come out of discipline-based education research, which uses social-science research methods. Some come from the Scholarship of Teaching and Learning, which might not use those formal methods and is more practical in nature. Those two forms of research exist on a continuum, and in most cases the "researchers" conducting them are simply instructors applying some sort of scholarly approach to improve what happens in their own classroom. Much of this work, she says, was never intended to make causal claims.

Many of the professors who want to investigate their own teaching in a scholarly way don't have the formal training to do so, Wheeler adds. Improving the quality of this research is the responsibility not of those individual instructors but of journal editors and reviewers who can help ensure that what a study shows — and what its limitations are — is well communicated.

There isn't going to be a single study, Wheeler says, that can definitively tell faculty what to do. But all those studies, taken together, amount to something: "It's not perfect," she says, "but what we're seeing is when we engage students in some type of way, this is beneficial."

A Potential Downside

But there is a caveat, Wheeler says. One of her own studies suggests that when instructors take up active learning without appropriate support from their teaching center, their courses have larger gaps in failure rates by race than the courses of instructors getting that support.

"In observations of hundreds of classrooms," Wheeler says, "I see instances where, when students are interacting with each other, there are microaggressions. There are clear implicit biases that students have toward each other. And those get exacerbated the more that we do active learning — unless the

instructor is setting up and co-constructing expectations for engagement; talking through what it means to work in groups."

The fact that active learning can go wrong underscores the need for colleges to better support instructors as they pursue it. That's been top of mind for Meg Mittelstadt, director of the teaching center at the University of Georgia, because her university is working to create a culture of active learning to fulfill the Quality Enhancement Plan required by its accreditor.

Context matters, and professors have to figure out which active-learning approaches fit their own. Then they can turn to the research. Mittelstadt also hopes that future research will include more examples of professors describing in Scholarship of Teaching and Learning papers how a technique worked out in their own classroom, which will help guide other faculty members interested in trying it.

There are all kinds of questions about teaching that research could help answer. But in the end, what most professors are looking for are good ideas about what is likely to work for them — and how to go about incorporating those.

Beckie Supiano writes about teaching, learning, and the human interactions that shape them.