

SARAH HANSEN: Well, you have a lot of followers of your 18.06 videos.

GILBERT That's wonderful.

STRANG:

SARAH HANSEN: And I'll read this quote to you. "A commenter even noted that this is not lecture, this is art."

GILBERT Gosh. OK. Well, if you're going to ask what's my system, I have none. I guess-- well, first I like

STRANG: students. And I want to help. And maybe the key point is to think with them. Not to just say, OK, here it is, listen, listen up.

I think through the question all over again as they do. And you have to give time. You can't zip through a proof. Because this class has to be sort of thinking with you. And that's-- yeah, that's my thought. I don't know if I achieve it, but I think it's the goal.

SARAH HANSEN: One of our users on OCW noted that during lectures you sometimes ask rhetorical questions, or maybe feign confusion as a way--

GILBERT Feign confusion? I'm confused.

STRANG:

SARAH HANSEN: Are you? OK.

GILBERT Well, no. Well, no, it's probably true. That's maybe part of not rushing through it. But getting--

STRANG: so I'll pause at the critical point, maybe. You have to give time to see, OK, what's the next step?

You know, mathematics is beautifully ordered, and sensible, and logical. And linear algebra is not too difficult. But still, you can't rush. You have to sort of see the idea a few times.

First maybe on the board as symbols. But not everybody picks up on symbols. Then you say, what does it mean? And then finally you say, why is it true?

But you don't say, "Why is it true? Give the proof," the very first step. You want to make people think, yeah, it is true.

SARAH HANSEN: Others have noted that you do this thing where you display your own thinking kind of on the

spot as you work through problems.

GILBERT Yeah.

STRANG:

SARAH HANSEN: Is there ever a risk in that for you?

GILBERT Oh, yes. And it happens, that I lose the thread or I come up to a dead end where I don't know

STRANG: what I'm supposed to do next. But generally, especially in 18.06, The basic linear algebra course that many people have watched, there I kind of get it OK. Yeah, I've taught it enough times to have a good chance of getting it right.

SARAH HANSEN: Is this a strategy that you developed over time? You know, lots of people are nervous to do that, to make themselves vulnerable in front of a large lecture class like that. But you're working problems in real time and demonstrating what happens when you hit a dead end.

GILBERT Well, that's OK, because students are going to hit dead ends, so it seems to me it's OK for me

STRANG: to get stuck, too. And then if they see, oh, OK, maybe this is the way to get out of that corner. Yeah. So essentially I think the thing is I like students. I like math. And putting them together is just the best job in the world.

SARAH HANSEN: Let's talk about humor for a second.

GILBERT OK.

STRANG:

SARAH HANSEN: You have been known to say things like, keep things in their Gauss-given order.

GILBERT I see.

STRANG:

SARAH HANSEN: And other really funny things that people just love. So what's the role of humor in your teaching?

GILBERT Well, maybe it's-- which is what I'm saying here, maybe the key point is to make it human. You

STRANG: know, you're a person, like the student is a person. The book isn't quite a person, but it was written by a person. And to see that it's just like a natural thing to do. Yeah. Yeah. Yeah.

SARAH HANSEN: So one of our users was thinking about how you teach complex material, how you convey it in

ways that are comfortable for students. And the user was wondering, how do you know when to go into detail and when not to?

GILBERT I suppose I try to think it through once again. And then you sort of automatically see the word--
STRANG: you recognize what words you need to use, and what the steps are. Yeah. If you're not thinking it yourself, then you're probably going too fast and not connecting with the thinking of the class.

SARAH HANSEN: And how do you connect with the thinking of the class when it's such a large lecture hall? And everyone's at a different point in their understanding.

GILBERT That's probably true. And of course, you don't know what everybody is thinking in that class.
STRANG: But overall, if you get-- if you stay sort of conscious of the class, conscious of where they are, that's, I think, the thing for any speaker, is to be conscious of the audience and not just a A-B inverse.

SARAH HANSEN: What else would you like to add about teaching 18.06 linear algebra?

GILBERT Well, with 18.06 of course, I'm just-- so, recently, Open CourseWare, which I think was just
STRANG: such a great idea. Great idea for MIT. Great idea for faculty. So they did a count of the number of viewers in 18.06, and it was 10 million. Which was like, woo. I never expected.

But I do get nice, really nice messages from all over the world. And I reply to them far as I can. Sometimes they'll ask what's a good way to learn math? I don't know if I have an answer to that. But anyway, I try to be encouraging.

So yeah. It's been wonderful. Just having the video lectures available allows everybody to be in the class. Yeah. So, thank you all for joining the class. Thank you.