

**[00:00:00] Bonni:** Today on *Episode Number 422* of the *Teaching In Higher Ed Podcast*, the *New Science of Learning* with Todd Zakrajsek.

**[00:00:13] Production Credit:** Produced by Innovate Learning, maximizing human potential.

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**[00:00:22] Bonni Stachowiak:** Welcome to this episode of *Teaching in Higher Ed*. I'm Bonni Stachowiak. This is the space where we explore the art and science of being more effective at facilitating learning. We also share ways to improve our productivity approaches, so we can have more peace in our lives and be even more present for our students.

I'm pleased today to be welcoming back to the show Dr. Todd Zakrajsek. He's an Associate professor in the Department of Family Medicine at the University of North Carolina, Chapel Hill and President of the International Teaching Learning Cooperative. Todd was a tenured Associate Professor of Psychology and built faculty development efforts at three universities before joining UNC.

At UNC Todd provides resources for faculty on various topics related to teaching, learning, leadership, and scholarly activity. Todd has served on many educationally related boards and work groups, including the *Journal of Excellence in College Teaching*, *International Journal for the Scholarship of Teaching and Learning*, *College Teaching*, and *Education in the Health Professions*.

Todd has consulted with organizations such as the American Council on Education, Lenovo computer, Microsoft, and the Bill and Melinda Gates Foundation. He's delivered keynote addresses and campus workshops at over 300 conferences and university campuses in 48 states and 12 countries.

Now, Todd, you have me wondering what too it is that we're missing? I just feel a sense of completion needed, but I am way off track now on this file. Todd publishes widely on the topics of student learning, effective teaching, leadership, scholarly activity, and assessment. Todd's recently co-authored

books, include *The New Science of Learning*, Third Edition, which you'll hear a lot about on today's episode. *Teaching For Learning*, Second Edition, *Advancing Online Teaching*, and *Dynamic Lecturing*. Todd Zakrajsek, welcome back to *Teaching in Higher Ed*.

**[00:02:45] Dr. Todd Zakrajsek:** Oh, my. This is so great to be back. I've been looking forward to this for so long.

**[00:02:49] Bonni:** Me too. Me too. I have an unofficial name for your book, as you are already aware. I call it the *New, New, New Science of Learning*. Before we talk about the *New, New, New Science of Learning*, I would like to ask you what is the old science of learning.

**[00:03:11] Todd:** I've never heard that before. Like in addition of *Teaching For Learning* I did, I never thought about calling it *Teaching, Teaching For Learning*.

**[00:03:17] Bonni:** Yes.

**[00:03:18] Todd:** I get to like a Sixth Edition of something, that's going to be exciting. The old science of learning, I guess, literally boils down to is that we have learned a ton of stuff over the last probably 15 years with neuroscience, the way that we can, actually, look at the brain and see what's happening. We have measurement devices now. We know when people are sleeping, learning like where it consolidates and why it consolidates is, actually, down to which stages of sleep.

We know that certain things like when you're in REM sleep is far procedural and when you're in deep sleep, it's more semantic information. Those things were never done before because we couldn't measure them. *The New Science of Learning* is, basically, we have an opportunity to look at how humans process information in ways that we never knew before.

Then before I finish, that means we've learned some really cool stuff. When I was in Psychology as an undergraduate, and this would have been a long time ago. One of the things we were told is, you were born with a certain number of neurons and as you kill those neurons off, then you never get any new ones. Blatantly not true, but we didn't know it because we didn't have the instrumentation that could watch neurons, form new connections and, actually, build new neurons. That's the new science.

**[00:04:35] Bonni:** Yes, there's a lot that we know now that we didn't use to and that also means there's a lot we still don't know. [laughs] Yes, that's why resources like this one are important to us to take what we do know and be able to help us be able to thrive in these different contexts of learning. You give us a

simple but simple to read, but it goes much deeper, but a simple definition of learning is that, when we do something new from experience and you talk about a few different types of learning.

You talk about Classical Conditioning, Operant Conditioning, and Social Learning Theory. I laugh because you do make a little joke in there about like hearing the bell ring with the salivating dogs. Many of us remember this from ours, maybe *Intro to Psychology* class, or whatever, as one aspect of learning. I know for myself, something that didn't get covered really at all that I can recall in my psychology classes was this Social Learning Theory.

It also, for me, was an area of my own teaching that I found I really needed to develop a greater appreciation for, and how to be able to use that theory in my own teaching. I'm curious, what do you find from faculty that you work with or perhaps even from yourself, how these three kind of interplay? If there are others who might be challenged with using one of these theories in their own teaching in the way I described?

**[00:06:05] Todd:** You've just asked a lot of things there.

**[00:06:09] Bonni:** There were five questions in one. [laughs]

**[00:06:12] Todd:** They're really wrapped in there, I'll tell you that. This is fascinating and quite frankly, this is one of the reasons I was excited to write the book and I'll come right back to what you're saying is, there's so much out there and we don't have time. If I'm teaching math, if I'm teaching English, teaching humanities, whatever I'm teaching, I don't have time to go out and try to figure out what is relevant and what is helpful.

What I tried to do is look through the material out there and figure out in about 100,000 words, what would really be helpful? I picked three. There's other learning theories out there too. The first one you mentioned is Classical Conditioning. Very quickly type of stuff in Pavlov, yes, that's it, but it's a conditioning where you don't have to actually do anything to be conditioned.

In a classroom situation, if a person asks a question and the teacher says, "That's kind of stupid," and you just kind of cringe a little bit, that's a classically conditioned setup out. The next time somebody asks the question and you cringe just quickly, and people do this all the time, that's because you've learned that. You weren't born like that. You didn't have to go out and try to learn it, it just happened to you.

For the people out there listening, if you ask students a question and they like cower just a little bit, or their face cringes up, or whatever, just keep an eye out

because there's people who have been treated poorly and they're just responding. That's one kind, and there's lots of other classical conditioning. It gets pretty complicated, but that's enough for now.

Then there's Operant Conditioning. Operant conditioning is just based on you do something, you don't go to study, but you do something and then there's a response. If the response is such that you end up doing it more, it's a reinforcement. If the response is such that you don't do it anymore, then it's a punishment. That's just as simple as it is.

Operant conditioning are things like students ask a question, and you start with, "Wow, that's a good question." I just reinforced you asking the question. Or I could say, "Mm-hmm, why did you that question?" I probably just punished it. The point there is we're doing stuff all the time. If I ask you to read Chapter One and then I give a quiz over it, and you take the quiz, you read the chapter to prepare for the quiz, I don't care if you liked the quiz or not. It was a positive reinforcement because it increased the probability of reading the book.

Lots of the things we do in teaching and learning are those types of things. We sometimes forget about the social learning stuff. It was Albert Bandura, it really got popular in the '70s, it's so important. Number one for observational learning. When we watch somebody do something, if someone else in the class asks a question and the teacher says something really mean, and then I think, "I'm going to ask any questions." Nothing has happened to me, but I observed it. Observational learning.

Now, you asked for a volunteer. I don't put my hand up. I don't put my hand up because I just saw what happened. On the other hand, if something good happens, and I raised my hand, again, didn't happen to me, but I watched it. Another area of Social Learning Theory is self-efficacy, the extent to which you're willing to persist when you're faced with potential failure.

If you got a person who says, "I just can't do it. I just can't. Just can't." They have a low self-efficacy, that's the real problem. The person who says, "This is really hard, but I think I can work through it, I can get it." You as a faculty member, can help students develop more deeper, better self-efficacy, so that when they do face things later, they will say, "I'm going to push through this one."

Those are kind of the different areas and then the way they interact, because you've asked about the interaction too is, classical conditioning. I mentioned that already. If a student asks a question and is yelled out, that's classical conditioning that's happening to that student. I'm not going to ask them anything, that's observational. Because I don't ask anything, it's actually kind of a punishment as well, in the sense that I've watched somebody be punished, I'm

not going to answer the question. These are all wrapped together all the time. It's just exciting to watch what happens. What I will tell everybody? Just as you do things, as you teach, just watch the reactions. So many times, we just do without processing it. I ask the question, student doesn't know it, I go to the next student. That student knows it, I ask a different question of a student on the right-hand side of the room they know it and I say, "Good." Then I go to another student.

How often do we stop and pause and think for that just a second or two, "How did the student respond when I started to move away?" When I asked a woman in the class and I'm saying woman because this is very sexist, when I ask a woman in the class and she doesn't answer within like two seconds, and I say, "Oh, you know what? That was a tough question. Let me ask it a different way."

If I ask a male a question and after four seconds, twice as long, I say, "What do you think? Come on, you got something," I've just treated those two humans very differently. It's so subtle that I don't think most people would catch it, unless you stop and say, "What just happened here?" Those are the nuances we have to watch for.

**[00:11:09] Bonni:** So much for me is that self-awareness and then also getting other sources besides yourself to catch you on those things. Like recording yourself in class or classroom observations from peers, that kind of thing can be so important in helping to shape our own behavior. Well, I know I didn't warn you about this, Todd, but I know you're ready for anything. We are going to play a game. Here's how this game is going to go. You are going to tell us, if you could be a superhero, you already are a superhero, but if you could be even more of one and have a new superpower, what would your preferred superpower be?

**[00:11:48] Todd:** Well, first of all, I'm not a superhero, but a guy trying to get along. That's all I am. If I had a superpower, most people will go for the obvious things, flying, transporting. My superpower I'd want to have ZPD ability, Zones of Proximal Development.. I would love to look at somebody and know whether or not they're understanding what I'm saying. Could they handle a little bit more? I'm a little too deep?

That's their Zones of Proximal Development.. It goes from, if I'm not complex enough, it's boring. You're bored by what I'm saying. If it's too complex, you're frustrating. Somewhere in-between there you can learn. The top half's the best. That's your Zones of Proximal Development.. If I could see that, whoo, you could change the world.

**[00:12:34] Bonni:** It would be an incredible superpower to have. I think there have been times in my own teaching, especially early on, I'm probably better at

it now, but especially early on where I thought I had that power in the sense of I would find myself making fundamental attribution errors and projecting things onto learners that were absolutely not there.

I try to recognize in myself-- Any of us still have the capacity to do that, but to reduce my confidence in my own ability and to try to interrupt that and try to get different information, these Zones of Proximal Development. I think sometimes I see us having overconfidence in our ability to do it when really we do need other sources of data to be able to help us calibrate this and do it well.

**[00:13:24] Todd:** Yes. Before we move on, there are a couple of things that are just the route of being a teacher, and that's a huge one. Knowing how to pitch things at what level. I use an example sometimes, telling jokes. If you're telling a joke to a group that you've never talked to before and they're making an initial impression of you and you're telling this joke, you get one shot.

If you tell a joke that's too complicated, not complicated, it just doesn't fit the audience, if it's not really funny, but funny to you, all those things could be true. If you tell the joke and the group just laughs hysterically, think about that for a second. You had to lay that all out and make a decision before you told the joke.

Other times, you're in a situation. You think, "Hmm. Don't say anything out loud. I've got a joke in my head, but I'm not going to tell it because it's wrong." Now, wrong for that group at that time. It's not going to be funny. When you walk in the classroom, it's the same thing. You have to decide what and how you teach, and at what level. I don't think a lot of faculty give themselves credit for that.

That's an amazing thing. That's why teaching is a profession, and you're a professional. I've watched people who were poor teachers or people who are not teachers who tried to teach, think about that for a second. They just lay stuff out and everyone just says, "I don't get it." No, it wasn't pitched the right way at the right level. The thing you were talking about, getting at the right level, just hugely important.

**[00:14:54] Bonni:** When I think about the many challenges that have been exasperated by the pandemic, one of them is most definitely cognitive load. I think about the ways that people have shared about "inviting people into your homes and all of the challenges inherent in that". There also were some opportunities. I joked on Twitter, although I was quite serious too, that I now know more students' dogs' names than I ever have in my entire teaching career.

It's not all bad, but it definitely has been challenging. An aspect of what has made this challenging for learners and teachers alike has to do with cognitive load. What can you tell us about cognitive load? How it relates to teaching and learning, and why it's so important for us to be aware of its presence?

**[00:15:48] Todd:** Whew.

**[00:15:50] Bonni:** How many questions was that?

**[00:15:52] Todd:** 3.5.

**[00:15:54] Bonni:** [laughs] We're getting smaller now, Todd. They're shrinking.  
[laughs]

**[00:15:58] Todd:** Before we're done, you're going to be asking one. It'll be great.

**[00:16:00] Bonni:** Yes, I can't wait.

**[00:16:03] Todd:** Here's my friend, Bonni, who has done this more times than anybody I know. By the way, never missed a week. This is just ridiculous my friend.

**[00:16:11] Bonni:** Never missed a week.

**[00:16:13] Todd:** You are amazing at this. For cognitive load, that's another one of those things as a faculty member and it's just critical for you to understand cognitive load and help people process information. Quick version, it really boils down to working memory kinds of stuff. You can only process so much at one time.

Think about the expressway. You got cars running down the expressway. Everything's great, but the expressway can only handle so many cars at a given moment. When there's too many merging on, merging off, changing lanes, all of a sudden there's too much stuff, comes to a screeching halt. Cognitive load does the same thing. I can process stuff and keep rolling along until there's too much.

Now, how we decide there's too much? There's three levels or three types of cognitive load that we pay attention to. One is implicit load. It's just some things are harder than others. A physics book is just harder than a third-grade novel. It just is. The next part is extraneous load, which is cool. Those are the things in the environment, which Bonni was referring to, that take cognitive load.

They're like the cars down the highway. They're extra things, but they're not really there to help your learning. They're just extra. If you've got a dog barking in the



background or kids running around or I'm trying to log in and then I can't find something, or if I'm in the classroom and the people next to me are talking, there's all this stuff that's going on, and that's extra load.

If you've ever been reading a difficult article and there's a couple people having a conversation at the other side of the room, but it's a little loud and you say, "Excuse me, could you keep it down?" What you could have said was, "Pardon me, I'm reading something with high implicit load, and you are extraneous load. If you could drop it down, I could pay attention to this article." That's how cognitive load works there.

Then the last little piece is, it's germane load, and it's how you process information. If I do something over, and over, and over again, our brain is wonderful in that, as you do something more and more frequently, it's long-term potentiation, that path of neurons fires easier and easier. The next thing you know, driving a car was hard at the beginning. Next thing you know, you're in a car. You don't think about changing lanes or pushing the gas pedal or turning the steering wheel. It's there because of you did it over and over again.

The other type are schemas. If you like walking to a fast-food restaurant, you know the difference than walking into a Ruth's Chris Steak House. We have schemas of what this stuff does. Now, very quickly, I know I've talked a lot, but I'm going to pull it all right back together all at once. If there's too much extraneous load around, just be watching for that. If you put a PowerPoint slide up and if you've got words on a PowerPoint slide, people are going to read it because there's words.

If you start talking, now you're talking, at the same time there's stuff up there, you've got too much cognitive load. They can't do it all at once, they're going to shut down, and then they can pick one thing. They're going to pick reading, and they're going to ignore your talking because they can't handle it both. If you've got a little characters up there on your PowerPoint slides, it's distracting. If you tell a story, "Hey, this reminds me of a time," that's extraneous load, unless it ties right back to the material.

If you can help your students form schemas, how can you pull stuff together like, I don't know, classical conditioning? If I can get you to understand the concept of classical conditioning that's a whole schema, now you don't have to come back and get the pieces, you pull the whole thing out.

As your students are learning and they're building schemas, they're practicing over and over, so things are fast, which is why we have to learn foundational things, you can't ignore those. When they get that down, now they're processing things. If you can keep the extraneous load down, you have a whole lot more



learning taking place. That was five, six minutes of something that I would suggest go read quickly on it. Tell you what, go to Wikipedia and just start there. Hey, those of you who are all saying, "Hey, well, you don't go to Wikipedia, that's a terrible place." They have a tagline that they don't use, but they should, "Wikipedia, fabulous place to start, hideous place to end." [chuckles] Go check out cognitive load it will get you rolling on those three types there. It's massively important to know where your students are.

**[00:20:30] Bonni:** Even just the conversation that we've had so far, and we're only skimming the surface here as you mentioned. It is fascinating the way that these things interplay with each other. Because while we want to keep the extraneous cognitive load stuff out and we really do need to be purposeful in how we design those learning experiences and all the associated materials and artifacts.

**[00:20:52] Todd:** Yes.

**[00:20:53] Bonni:** We still want to be thinking about the Zones of Proximal Development. because you don't want it to be easy. That is another thing that I think about early in my teaching, when things got hard, I thought I was supposed to fix that. Now, I recognize when things get hard, unless the hardness is unrelated to the learning. The deepest learning is going to be messy, is going to involve failure. That if I try to fix it too much when it's, actually, relevant to the deeper learning, and the failures, and all of that.

It's fascinating to me how all of this interplay and then back to how you started us off with thinking about the different learning theories and how they interplay too. You can tell, I have a little bit of schema going [chuckles] for myself in the sense of when about these different models. You can start to begin to see the ways in which they might shape your teaching and the ways in which they might shape others learning.

**[00:21:53] Todd:** Yes. One quick thing. You just said something that was so really so important. Long-term potentiation where you practice, it becomes easier. Practice becomes easier. What you just said was, when it gets hard and you want to help the students because they're struggling with it, keep in mind that you have done it over, and over, and over again, that's why it's easy for you, they will never ever get good at it if they don't do it over and over. If you step in and do it for them, it's not going to help.

Ikea bookcase, boom, that's excess cognitive load as soon as you open the box. Here's the deal, Ikea's amazing. After you put together two or three of the bookcases, it's really not hard. You learn systems, you put pieces around, and everything. You become really fast, really quick.

Just think about it for a second. What happens if every time I open the box and I say, "Wow, this looks complicated." You say, "Let me do it," and then I sit back and watch you. I would never become good at it. The concept there is just let people struggle a little bit. It's, actually, called Desirable Difficulties and Robert Bjork has a whole lab about it. I'm glad you mentioned it, Bonnie, because it is a foundational thing and it's a hard thing. You want to help your students, but you're not.

**[00:23:06] Bonni:** I always love when Robert Bjork's name comes up because he's been on the show previously. I was invited to go speak somewhere in Texas, and I can still recall standing up in front of 300 or 400 people, someone asking me a question and me thinking, "This relates directly to his famous thing that he says, "Failure is the friend of learning," only I could not for the life in me, remember Robert Bjork's name.

The funny thing is that like you only have to really do that once. Once you fail really publicly and you just mess up so exquisitely, you'll remember that name in the future. I literally have never forgotten all those years. Since then it's like, "Oh, no." I also think that's good for us and spoiler alert for later in our conversation. As educators, we're going to need to be pretty vulnerable and willing to make mistakes or we're, actually, not doing our students any favors in that category either.

**[00:24:05] Todd:** Yes. Part of the Social Learning Theory, they got to see us make mistakes too.

**[00:24:09] Bonni:** Yes. Another big area that I think we get off track on, you, of course, have created this wonderful resource for students. Actually, you've created it for all of us but I'm going to take it on the aspect now for teachers. I feel like way too much of the time when it comes to group projects, we just assume they already got it from somewhere else, and if they didn't, they should have.

I would love to have you talk to any of us who assigned group projects, and it doesn't matter master's, doctoral degree, undergraduate. Whatever level it is, what should we be doing to help those learners in those group projects be able to, actually, learn from the experience in being in a group and then learn from whatever the particular assignment is being assigned?

**[00:25:01] Todd:** That's another one that's great. Actually, I want to pick up a tiny little piece, and then I'll get right to the groups. When you said it's written for students, the voice is written for students. When I write a book, I try really hard in my head-- usually it's about third chapter before I can really get it down then I go back and rewrite the first two. I put myself in a set and it's like if you're sitting

in a classroom as a student, what would I want to hear? What would I need to hear? If you're a teacher teaching it, what would I need to say? What would I need to construct?

I tell you, I wrote this book with two voices and I purposefully did it and I went through. If I was successful and this is not an easy thing to do, so I may have missed, a student should be able to read this book and say, "Wow, this is really helpful," and a faculty member should read this book and say, "Wow, this is really helpful." Try it out, if you're listening, give it a read and see if I did that because I think I was straddling a line that I might have made it.

**[00:25:56] Bonni:** I would just like to say that, for this faculty member, you knocked it out of the park. If that's what you were going for, you certainly did for me, and I definitely think that you covered both of those bases. It felt so relatable to me, both as someone who's been in the role many times as learner and many of the times as teacher. Thank you for that gift.

**[00:26:15] Todd:** Good. Excellent. Well, I'm glad we did that one. Now, we're going back to the group and I wanted to make sure you get that in there in terms of the folks listening. I don't think of it as a student's book. It's both, I hope. Group was *Chapter 12*. I got to say, when I started this book, there were certain things that I just really, really wanted in the book. A chapter about groups is just something I just really wanted.

The reason is that when you say to students, "We're going to have a group project," there's a preponderance of times when people will groan. Part of it is that people get put into groups, but not told how to do it, so then they're not successful. Then they hear the word group again, and their first thought is, "I wasn't successful." It turns out if you teach people how to work well in groups, they don't hate them so much.

There are a couple of things you can do. I'll tell you. I think one of the things everybody should do is, before you actually start off on your group project, put your students into groups of four or five and ask them to talk for 5 to 10 minutes about the best group they've ever been in and the worst group they've ever been in, and jot down the characteristics, what happened?

Then have everybody report out. They're going to be students who are going to say, "I was in a group, total chaos. Nobody knew what anybody was doing." Somebody else is going to say, "I was in a group and it was great because we assigned each other roles and it worked so well." Somebody else is going to say, "We get into groups, but we never talked about the topic." Somebody else is going to say, "We were in a group one time," or, "I was in a group one time and

there was the person who was the leader who set out agendas and it was great."

If the students talked, listen to them, and then what you can say to them is, "I will do my best if you do your best and we will try to minimize those things that were problematic for you, and we will maximize the things that were good." Those are things like right on the first day of class, do your best to set up a meeting. What'll happen is if you don't do that is a group will get together and they'll set up the next time they're going to meet, and then they'll say, "Well, when we meet, we'll pick the next time."

You all know how hard it is to pick a time to meet 10 days out, but it's not that hard to pick a time to meet that's a month out or two months out. You pick all those and then I tell my students all the time, "Make one extra meeting just before the due date, because if you need it, you got it. If you don't, you can cancel it."

Explain to them, you set that up. Set up the roles, set up what you're going to do, every group meeting should have an agenda, have a timekeeper, and so it's the things we know that work. We all know what works because we've set through some really good meetings and we've set through some bad ones. If you don't teach students how to do well in groups, they don't tend to get better and some of those students are going to become department chairs. You really want to teach them how to be good with groups.

**[00:29:07] Bonni:** Before Todd and I get to the recommendations part of today's episode, I just wanted to take a moment to thank today's sponsor, and that is Text Expander. If you've been listening for any length of time, you already have heard of Text Expander. They've been the longest-running sponsor. What I love about them is that they are such an integral part of my daily computing life.

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This is the time in the show where we each get to share our recommendations and my recommendation, first off, is to be like Todd. What I mean by that is that I found, not only as I mentioned previously, I found that this book is a very helpful relatable resource for learner or teacher alike, but I really appreciated your vulnerability throughout it. You talk not in excessive ways, but enough to say, "Hey, this is a guy that maybe hasn't always remembered everything," or, "Hasn't always done what he set out to do."

Because we're all going to encounter struggles, so talking about your experience as a first-generation student, not always having a lot of money. I learned a lot about you as a person, it made you more relatable, which is to say vulnerable. I have something specific to recommend around my own recent being like Todd and being more vulnerable in a space. Before I share my second recommendation. I just want to read a little bit and then invite you to respond, Todd.

This is from the final chapter. You write, "I leave you with a following to consider in the months ahead. Be mindful of your past, but look to the future. Listen carefully to the voices of others and find respectful ways for your voice to be heard. Find ways to get what you work so hard for without taking away from others. More importantly, always strive for more so that you have more you can share ever forward." Would you share what it was for you writing this final chapter? That was such a gift to me and I know will be a gift to so many others.

**[00:33:00] Todd:** Yes. I got to tell you, I tear up every time I hear that stuff. That was really written from the heart. There was so many things that were rough going through school. My wife and I lived in Northern Michigan and we had to cross the Mackinaw Bridge to go home. We didn't go home one time because we didn't have the \$1.50 toll. That's why we didn't go home. We couldn't come up with \$1.50.

These things happen. I think it's really important, this is why I really when I talk to students, I really want them to know is-- I've written 11 books and I've given 300 presentations at colleges and universities. I think it's 12 countries, I think been invited to. All that's happened. I think it's really important to point out, when I went to college, I was a first-generation student at college I was terrible. I got an F minus minus on my chemistry test.

If you don't think you can get enough minus minus score of 30%, and have the prof grade it. I flunked all of my classes pretty much and I went to the registrar and said, "I need to drop out to college what do I do?" This at the first semester, "How do I drop out?" She said, "Don't worry about it, hun. Just take this piece of paper and get the signatures from your five classes. You bring it back and we'll take care of it." I said, "Okay," and I got four signatures.

Tim Sawyer in psychology refused to sign it. He says, "This is stupid." He says, "You've started out bad, you can correct this. Maybe you can, if you can't great flunk out later, but don't flunk out now. Give it some other try." I point out at the beginning of the book and I will point out to everybody listening, one signature by Tim Sawyer saying, no, that's what made the books possible, the speaking gigs possible. I got an Honorary Doctorate.

Never in my life I expected to get a doctorate, much less an honorary one. One signature. I traveled the world, one signature. I've been able to speak to a lot of people. I never would've met Bonni, one signature. When a student comes and needs some help, just take a second and see if your minute or your refusal to say, "I'm not going down that path, we're going to figure this out," we'll change their life. That's just, to me, the ability to help people do that, that's the thing.

**[00:35:17] Bonni:** Thank you so much for that, Todd. Thank you again for the book. I am now going to be like Todd and I'm going to share a little bit about an experience where I decided to be vulnerable in that way that you model so beautifully for us. I decided to post a tweet and I will admit this was one where I had my finger on the, "Do I really want to press the tweet button on this or not?:"

I decided to, and the tweet said, "Feeling a little bit scared of the reading commitment I've made to myself and to *Teaching in Higher Ed* listeners and guests. I have the honor of speaking to some tremendous educators and thinkers, and reading their books over the next two months. One of the books is about math. Math Can I Do It?" Then, the emoji that I put is the crying, laughing emoji, trying to be lighthearted.

What resulted on this is some people who I do know commenting, such as my husband says, "Plus, you'll get lots of credits for our library challenge." We joined our local library's reading challenge, so this is really stepping up my long-form



reading game. Has been fun. Some people who I don't know, but was so fun to just be encouraged by people saying, "You've got this. Yes. Yes, you can."

It was really fun just to get people's reminders about growth mindset. I am a big believer in growth mindset. If I put my mind to something, "I am working on a person, becoming a person who can read books." [chuckles] Which actually reminds me of Todd of Steven Brookfield was really coming and speaking at a number of Lilly Conferences I got to attend years back. That's a really big part. He's modeled that for me. I Am Becoming A Person Who. We did our entire faculty gathering one year off of his inspiration around I am becoming a person who.

Anyway, fast forward in the tweets to Peter Newberry, he asks me, "Is it the book I'm talking about *Math for Human Flourishing* by Francis Su? Because that is an absolute joy to read." I was not familiar with Francis Su or his work, and no, it was not his book. Then George Woodbury, who actually has recommended I think probably five or six guests. George has really been a connector for me for many excellent guests in the area of math, but also in other disciplines as well. Thanks to George for asking about what the book was.

By the way, if you're interested, *Who's Counting?: Uniting Numbers and Narratives with Stories from Pop Culture, Puzzles, Politics, and More*, by John Allen Paulos. I'll be interviewing him coming up. Anyway, back to Peter Newberry's recommendation, I definitely, of course, love hearing from people who listen to this show. Peter has been on the show before. He's also recommended many tremendous guests, so I'll definitely be looking forward to learning more about Francis Su's work, including the book that Peter mentioned.

We can't always read all the books we want to read is the understatement of the world. Peter recommended an incredible blog post that is entitled, *The Lesson Of Grace In Teaching*. I did read that and that's my second recommendation. What a beautiful-- Look, it actually ties, Todd, back to something that you mentioned, it's the little thing. He uses the word grace to describe these little things that-- He talks about that a student mentioning something about getting things in late because a parent had passed away.

There are all kinds of ways we, as faculty might respond to that news and how Francis response is, "Can I take you to coffee?" Then shares of his own parents struggles with cancer and really meeting-- That is way beyond, I think what someone might anticipate by just sharing that news with their professor. They're asking for an extension and what they got, he describes as grace. It was just a beautifully written talk that he gave as I think he was maybe receiving some an award, but it went viral.

It's just a exquisite piece of writing and just a reminder to me and to so many of us, is how the seemingly little things that we can do that can change an entire trajectory of someone's life. Just awareness of the importance of the discipline that it takes to think carefully and intentionally about the way we're going to respond. Those are my recommendations and Todd, I'm going to pass that over to you for yours.

**[00:39:51] Todd:** Wow. That's great. I do have to comment on the one though, just heard about the things that's said. Everybody listening, just everybody listening, think about a time when somebody said something maybe even as a throwaway statement, but that statement changed your course. I don't use positive negative, it changed your course. Everybody I've ever met has at least one of those.

The cool thing I like to try to work at, and I hope you do too is, down the road, would it be cool if somebody said to a different person, "Who changed the course?" That person says you. Your name comes up. I try my best to just say the one quick little thing off the side and I walk away. It's not a big discussion. Just like, "You know what? That's one of the best essays I've ever seen. It is incredible," and I walk away. The point is, we can do those little things.

Yes, a recommendation? Whoo, this is hard. I listened to a lot of your things and there's many things have been recommended , I don't remember seeing Ambient Mixer. Ambient mixer is an app and it's really pretty cool because if you really need kind of a noise around people do TVs, radio different things, if you need that noise or something-- White noise is okay but it's a little staticky, this Ambient Mixer will allow you to pick like a foundational thing and then it's a mixer, you can change it.

You can pick like hard works and then you can say, "A little bit more fire crackling, a little bit less chatter," and you go through and make it. If you're from New York City and you find yourself in, I don't know, K State in Manhattan, Kansas, you can't sleep because there's no sirens and stuff. You can pick New York City and say, "I want more garbage trucks, less sirens." It's a mixture of different sounds. I play that now when I'm writing, and so it gives me the ability to listen to a stream and add some wind if I want. I really like that one Ambient Mixer.

**[00:41:43] Bonni:** Oh, Todd, that sounds phenomenal. Thank you much for not just today's visit to *Teaching In Higher Ed*, but for all of your prior ones and the way that you've spoken to my teaching and many others. I'm just grateful for our friendship and for the opportunity to keep learning from you. Thank you again for coming on the show.

**[00:42:02] Todd:** Well, I really appreciate it. I remember where you started this program and today's program, the whole thing, and just looking forward to what you would do and it is so, so much more than I ever expected. You done a fabulous job. Thank you for letting me be on the show. Thank you to the folks who are listening. Todd Zakrajsek is not a hard person to find because I'm the only one in the world. If there's any way I can help you out, just let me know.

**[00:42:28] Bonni:** Thank you once again to Todd Zakrajsek for joining me on today's *Episode Number 422*. If you'd like to access the links for today's show there at [teachinginhighered.com/422](http://teachinginhighered.com/422). Or, even better, subscribe to the weekly update where you'll receive the show notes in your inbox each week for the most recent episode along with some recommendations that are over on top over the ones that show up on the show and some other goodies there. Sign up at [teachinginhighered.com/subscribe](http://teachinginhighered.com/subscribe).

Today's episode was produced by me Bonni Stachowiak and was edited by the ever talented, Andrew Kroeger. Podcast production support was provided by the phenomenal Sierra Smith. Thanks to each one of you for listening and we'll see you next time on *Teaching in Higher Ed*.

**[00:43:27] [END OF AUDIO]**

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