Transcript - Transform Learning:
Beyond Content: Teaching for a Better World

6/24/2025

NORMA HOLLEBEKE: Welcome to the Every Learner Everywhere transform learning community of practice webinar. It's a pleasure to have you with us today. My name is Norma Hollebeke. And I'm the associate director of innovation and programs with Every Learner Everywhere.

Some quick housekeeping notes-- we are recording this for those who cannot join us today. And throughout the presentation, we welcome your questions and comments in the Q&A and in the chat.

Before I introduce our panel moderator, I'd like to take out just a few minutes to tell you about Every Learner Everywhere and the mission of our network.

Every Learner Everywhere is a collaboration of higher education organizations with the expertise in evaluating, implementing, scaling, and measuring the efficacy of education technologies, curriculum and course design strategies, teaching practices, and support services that personalize instruction for students in blended and online learning environments.

Every Learner Everywhere is sponsored by the Gates Foundation. And here at Every Learner, our collaborative work to advance access to higher education centers on the transformation of post-secondary education through teaching and learning.

We build capacity in colleges and universities to improve student outcomes with digital learning. Our mission is to partner with institutions to harness digital learning technology, driving innovation in higher education to improve outcomes for every learner.

And now to our moderator, Dr. Christine Latulippe. She's a visiting associate professor at Linfield University. Throughout her faculty experience at a public Hispanic serving institution and at a private liberal arts college, Christine has promoted equity and work to advance inclusive excellence, facilitating learning, which applies to and enriches the lives of pre-service and in-service teachers alike.

Many students have never known how strong their mathematical skills are because they are never given permission to share their own strategies and come to their own understanding of mathematical concepts. Christine strives to change that experience, allowing those students to succeed and to open doors to populations who may not have yet recognized themselves as part of higher education communities. Christine.

CHRISTINE LATULIPPE: Thank you very much, Norma. Welcome all, and thank you for your patience with the sound. Hopefully, we get that worked out quickly here. Welcome to our transform learning summer community of practice webinar.

This project is focused on digitally enabled teaching and learning as a mechanism for improving mathematics learning across post-secondary institutions.

My role on the project is community manager of the Transform Learning Community. The goal of the project, in addition to being a hub for instructional examples, is to engage with the academic community.

The Transform Learning website offers resources and best practices across pedagogy, curriculum and technology, as well as a growing body of evidence to support the use of technology in the classroom to support learning and improving equity.

Digitally enabled evidence based teaching practices refer to instructional approaches that integrate technology, tools, and platforms to enhance and support teaching methods grounded in empirical research and data driven insights.

These practices leverage technology in order to collect, analyze, and apply evidence to inform and improve the effectiveness of teaching strategies, ultimately leading to more successful learning outcomes for our students.

The eight digitally enabled evidence based teaching practices are active learning, decreasing professor lecture time, and increasing student participation in learning, assessing, and activating prior knowledge, determining what students already know and integrating their experiences into learning.

Data informed instruction, adjusting instruction based on real time student data. Formative assessment and practice. Deploying a frequent, low stakes way to monitor student learning. Fostering a sense of belonging through an inclusive learning environment. Next slide, please.

This is where we create safer and more welcoming spaces for learning. Instructional transparency is when we share the why and how behind instructional decisions.

Metacognition and self-regulated learning is when we help our students learn how to learn. And peer collaboration is when we create opportunities for students to support each other's learning. And the next slide, please.

To implement the digitally enabled evidence based teaching practices, it's important to remember a couple of ideas. We can start anywhere. Our practices are not sequential. We can start with any of the eight. We can take small steps.

The practices do not need to be implemented in full in order to make positive changes for our students. And different practices drive different outcomes, so we can implement different practices in order to reach very specific teaching and learning goals.

To this end, we will be joined today by two experienced educators who will be leading our discussion and sharing their insights and strategies for leveraging diversity to teach for a better world.

Dr. Bryan Dewsbury is an associate professor of biology at Florida International University, FIU. He is the principal investigator of the Science Education and Society or SEAS research program, which blends research on the social context of teaching and learning, faculty development of inclusive practices, and programming in the cultivation of equity in education.

He is an associate director of the STEM Transformational Institute, where he directs the division of transformative education. He is also a fellow with the John N. Gardner Institute, where he assists institutions of higher education, cultivate best practices in inclusive education.

Dewsbury grew up in Trinidad and Tobago and immigrated to the United States in 1999. He received a BS in biology from Morehouse College and an MS and PhD in biology from FIU.

Dr. Dharma Dailey conducts empirical research at the intersection of human centered design and data science, focusing on collaboration practices, structures, and resources that foster high quality science and pro-social outcomes.

Having mentored over 20 data science teams, she emphasizes the integration of human centered practices to improve processes and results. Dr. Dailey actively engages with educators to share strategies for teaching and learning data for good.

Her current research interests stem from her PhD mixed methods study on the role of social media in crisis affected communities, reflecting her long standing commitment to

community based design and advocacy since the 1990s. Please help me in welcoming Bryan and Dharma.

BRYAN DEWSBURY: I just imagined round of applause. Hi, everyone. Thanks for choosing to spend this time with us. You're here because you love teaching. And I just want to acknowledge that as a step into this conversation.

And one of the beautiful things about this practice is that we could always grow. We always are students of the game. We always look back on that last 15 weeks, that last semester. And hey, I could have done that little thing a little bit differently. I could have structured that activity better.

We are the type that when you look at your-- when we look at our grade rosters, we don't just say, oh, some students got As, some students got Bs, some students got Cs. We look at that as data that is telling us, there are things that students could have done better. There are things we could have done better.

We bring our whole selves to the practice. And in so doing, we are willing to look in the mirror and reflect on what are tiny things that we can bring to the next experience that can make it that much more fulfilling for ourselves and for students.

Over the 11 years I've had the privilege of being a faculty member, Intro Bio is my favorite class. And I know Dr. Dailey would agree with me because she's an intro teacher as well. There's something special about that space.

There's something special about not just the task of preparing students for future classes in the discipline, or the major, or the university, but also acknowledging that they come into our classrooms as whole people, as emerging adults, as young men and women, and however they identify as.

People who are no longer adolescents, but not necessarily fully adults, who are entering, as psychologists like to say, an age of exploration where the college campus and by extension, our classroom provides an opportunity for that exploration to happen in a relatively safe way.

It's a time when even if they don't use the words, they are developing an identity of some type. See one thing I would like to communicate to you, before we get into the specifics of practice, is that we have to remember that our students are not going to talk to us in the way other academics talk to us when they write fancy papers.

They are not going to walk up to us and say, Professor, I don't feel a sense of belonging. They are not going to say, I feel stereotype threat descending and thus I would ask for you to review your practices in order to mitigate that.

The challenge and the beauty of teaching is to be able to read the subtitles, is to be able to see the non-verbal behavior, is to hear the words that they articulate and understand the real meaning beneath it.

So I'm a firm believer, my friends, that active learning is a key element, a key mechanism to create a vibrant classroom and to get at those higher learning goals that most classrooms want to achieve.

But I want to begin today by talking about what makes, not just Intro Bio but any classroom, what teaching with an equity minded focus in mind-- what makes it so special. Let's transition to the next slide.

First of all, it's an opportunity to leverage diversity. I know that sometimes words can create issues. But I'm reminding you and perhaps don't need to tell you this.

That we are scholars of this craft. And by we, I don't necessarily just mean Dharma and myself. I mean all of us on this call. And we know that these words have meaning. I come from a marine ecology background.

And we understand that diversity is something that's inherent in any environment. When I studied seagrasses, it was a simple matter of when you have different organisms, different species, their different functions and their different roles led to a more productive ecosystem.

When I use the word diversity in this context, I am not simply referring to census categories that arbitrarily gives us race labels. I'm saying that every individual who walks into that room walks with their own histories, their own fears, their own social status, their own generational status, their own perceptions of themselves, their own ethnicity, their own nationality.

And I view these things not as things to solve as an issue to mitigate. I view these as opportunities for other students in the class to learn from each other.

In other words, while Bryan, hopefully, with my years of experience as a biology professor, is able to introduce them to the beauty of seeing a world through that lens, I understand that additional opportunities are present in the classroom for them to hear perspectives that are not coming from me.

And so the way I set up assignments-- and we'll get to that in a while. But the way I set up assignments gives them an opportunity to engage. But before I do that, it's important that I know who they are.

So two quick strategies I want to share with you. One, a colleague of mine, Tess Killpack and Laverne Melon published a first day intro sheets. It's a very short strengths-based survey, 14 or 15 questions that asks them things like, what career you would like to pursue, what grade you expect to get in this course, what your Wi-Fi situation at home. Describe something your professor does that you like, something that you don't like. So the simple survey is already building a simple profile of the students in the class.

And I like that it's simple because it can go into a Google form, which once filled out, turns into a Google Sheet. And so it's an easy way to get a sense of who's in front of you.

Another assignment I give-- I've used this in my big classes as well, is This I believe oral essay program from National Public Radio. Yes, I can grab and plug and play because I give them $13.12 a month. And I think that gives me the right to do this.

They actually encourage you to use this assignment. The link that you're looking at, it literally says guidelines for educators. I can't tell you, my friends, how beautiful-- I don't like to rank things, but this really is my favorite assignment.

This assignment, for me, encapsulates what is beautiful about teaching because it's not that I teach biology, I teach students. And when I'm asking them about their why-- because the prompt says, describe the passions that shape your-- sorry. Describe the values that shape your deepest passions.

I'm communicating to them that I'm interested in you as a person. I'm interested in cultivating your development, not simply you getting an A or B in bio. I want to see where you are. I want to see what drives you, what motivates you, what brings you to this space.

And just by doing the assignment, much less what they write to me when they give it back, it is the best-- I don't know if articulate is the word, but it's the best data set that tells me who's in front of me and how diverse they are.

So now that I'm aware of who's in front of me, now that I have a sense-- and again, I don't limit diversity to any categories. I'm not just interested in diversity just to say, hey, look, I have a diverse classroom. See, we did it. We're diverse. Let's get that united colors of Benetton poster. We have all the different shades. No, no, no.

The diversity matters like I told you because opportunities are created to learn. Opportunities are created to engage in meaningful dialogue. The etymology of the word dialogue is finding meaning through words.

So when I say dialogue, it's not simply a matter of let's have some conversations. Let's make the class active. Let's put them in groups. No, no, no.

The entire scenario is set up so that the individuals involved in the dialogue leave that experience with a new meaning. So for this to happen, the environment of the class and the rules of engagement have to be set. Next slide.

So before we get into any putting them in groups, my understanding-- in my view of teaching students, I know that intro experience can be an intimidating one.

I know that some students, even today, with all of the great professors like yourself doing active learning and thinking about inclusive strategies, it can still feel like [GASPS]. Will I get through this because this is so important for me to get to med school or get to grad school?

So I need to set the tone from day one that you are not in the Hunger Games. I'm not setting you up to compete with each other. I'm not a barrier for you to solve. I am here because I'm your biggest advocate.

And I'm going to do all that I can to ensure that you get to a place where you can see how powerful your potential is. And that will mean sometimes that we have to have some hard conversations.

That means sometimes that you may have to stumble a bit on a few quizzes or an exam before you see what it takes to really know something. That might mean that you will come across ideas that run counter to the beliefs you've had until you walked in this classroom.

That might mean we might have to discuss parts of our scientific history that might make you uncomfortable. But the good news is that all of that leads to learning. We learn from those things. By going through that pathway, we see what we can do better as people.

So when I say to you on day one that instead of just saying, hey, we have tutoring services, I say that this is a technical class.

And all technical means is that the language used to describe the things we do in this discipline is language that you may not have heard in the street, or in your family, or in your house because it's specific to the practice.

And in order to get good at this practice or any practice, you spend a lot of time in the environment where that language is spoken. And the more time you spend in that environment, that language and the practices will become second nature to you.

So I have three hours a week in class to create that environment, but that may not be enough. In fact, that will not be enough. And so here are the opportunities for you to be in this environment.

And I'm talking about tutoring. I'm talking about my office hours. I'm talking about my learning assistants, who themselves have hours. I'm describing the same services, but I'm describing them as opportunities.

So once we do that, we put them in groups. Preparing them and putting them in groups is easier because the same discussions that we're having at the classroom level, it is explained that these are the expectations once you're in a smaller group of four.

So I just want to unpack this a little bit more deeply because a lot of times, group work-- if you had to do a word cloud of active learning strategies, in most campuses, group work might bubble up to the top as the thing people know. I'm not hating. I'm just saying this is a thing people know.

But what I've been pushing for and I'm making the case for here is to not just think of group work as group work, not just think of group workers-- ooh, now I get to only have to grade X number of students divided by 13 assignments.

Think of what it takes for a group project to be successful. Think of your own lives. Think of your own practice as a faculty member. Think of grant you may have written or faculty meetings, god forbid, committees you sat on.

Think of what makes it go well and what doesn't make it go well. And ask yourself, when we set up groups in our classroom, is this not an opportunity for us to be intentional and explicit about cultivating those skills right there and then?

So instead of just doing the math and creating-- get into groups, groups of four and now do this worksheet. If that conversation is not made explicit, then some of the toxic behaviors that exist in the bigger classroom will simply remanifest themselves at the level of the group.

I'll raise the stakes even more. The things that make group work goes well, the things that make problems more likely to solve or to have solutions that are much more enriching are the skills and the values of listening, and respectful critique, and self-correction, and humility.

And I ask you to look around your country right now and ask yourself if these are not the very skills we need in the society as a whole. Are we crossing our fingers and hoping that some generic class, some class in the humanities, some programming in residential life will cover that?

Is our classrooms not an opportunity for us to be very clear on that this is what's needed, not just for your disciplinary expertise but for your civic engagement as a whole?

We have to lean into this 100% my friends. So it's not just that the class is diverse. It's not just that you feel included when you get there. Now that we have the beauty of this diversity, now that you understand that your opinion and your presence is not just respected but you matter, let's now solve real stuff. And so what does it take to do that? We do a process called guide posting. And it's basically a list of statements that sets the criteria for what respectful dialogue looks like. I may I have shared this in the past and I'm happy to share this afterwards, but it includes statements like respect silence. When things get difficult, turn to wonder. Everyone has a right to speak their truth. And these are not hard and fast statements. We actually discuss these statements as a class. And we change words depending on how people feel about certain things.

The point is to come to a community agreement. And the reason why that's necessary-- because remember, the example I'm giving here is from Intro Bio. Sometimes they're doing case studies on looking at death rates from COVID.

Sometimes they're looking at data from eugenics in the 1920s. Sometimes they're looking at the Tuskegee study. Even in a biology class, sometimes the discussions are not easy. Sometimes we're discussing this whole notion of race and what it means socially and biologically.

And so just because I have a diverse classroom, just because I want them to have meaningful dialogue and I put them in groups doesn't just mean it will happen.

We have to talk through what that's like and what might happen because I respect you as a being. And part of you as a being is you have an emotional side that's a real thing.

And as much as you have reason and rationality, you have feelings.
And in some discussions, feelings might come up.
And let's not just pretend that they don't exist. The key is, how do you not let the emotion take over your mental capacity such that you cannot approach your problems with rational and reasonable thought?
I guess the secret here-- maybe not so secret, here is I want all of my students to thrive in biology. And I don't want people to feel like Bryan's just out here singing kumbaya and speaking civic values.
We do a lot of biology. And in fact, I want to direct you to a paper we published in 2022 I believe, in Plos One, on inclusive and active pedagogies.
And in that paper you will read that we've cut the DFW rates and not just reduced-- not just reduced the failure rates, but those same students went on and thrived much better academically than a comparison group who had the class with just high stakes exams.
If you do find that, I'd love for you to put that in the chat.
So I do want them to do well in biology. But when I teach, when I say I teach students, my end game is life. My end game is how they go out into the world and be their best self. And being a great biologist is part of that.
But in the context of what the world needs from them is actually just a part of that. I want to toss it to my wonderful colleague, Dr. Dailey, who will talk about how they do a similar thing in their classrooms. Thank you so much, everyone.
DHARMA DAILEY: Thank you, Bryan. I get very, very inspired every time I hear you talk about your teaching approach. And it really makes me wish I was your student. I get FOMO that I'm not in your classes.
So I'm going to switch the topic a little bit to think about, how do we teach students to do what Bryan does in his classrooms? I'm particularly thinking, in my case, about this thing called human-centered design, which is one trajectory of humanist approaches that exist around technological design and where that fits into STEM fields.
Maybe it's a useful concept for you, maybe it's not. But we'll give it a whirl for a few minutes. And also thinking about where it fits in STEM education. Next slide, please. So I'm just going to do a little bit of definitional work here around human-centered design and what it is. Next slide, please.
Just first thinking about how complicated design is. So when we say the word design, 9 times out of 10, we're thinking as the consumers of design. We're thinking about an

artifact or intervention that has been created for us. The design that somebody made for us.

And what I'm trying to teach the students that I work with is the plan or intent to affect change and the act or process of effecting change. And curiously, this word design has to do the work of all of those things for us. Next slide, please.

And this concept of human-centered design has been, really, exponentially, something that has swept across computer science and related fields.

Since technology has really infiltrated itself into every aspect of our lives and become more and more important in more places, so has this constant consideration of what it means to do human-centered design for contemporary systems.

So as you can see here, from the ACM, in 2023, there was more than 116,000 references to this term. And most of them are fairly recent. Next slide, please.

So I think about this a lot because I have two degrees with human centered design in the title. And the simplest and most concise definition for me, what I'm looking for when I hear that term is integrating multiple perspectives into our design, particularly the perspectives of those who are directly or indirectly impacted by our designs and, of course, people that are the intended beneficiaries.

And of which, being able to know who's been impacted, who's benefiting. This is all a skill set that I'm trying to encourage people to learn analytically. I call it sometimes informed empathy. So empathy, of course, we want to do good things for people. We want them to feel good. We want to feel good about what we're doing.

But informed is the key word here. This is an evidential process. And what I really want students to walk away with is understanding that there are approaches that are more systematic or less systematic for doing human-centered inquiry. Next slide, please.

There's an intellectual lineage that matters to me in this work, Kling and Star, 1998. And they, specifically, have this idea that technological systems are co-constituted with social systems.

And that's a really important idea. And it's different than what we teach a lot of times when we're teaching technology design, not always the baseline assumption that's being made. But it's one that I see play out in the work-- in the empirical work that I do.

And if you think that technologies influence how social relations happen and social relations play out to what technologies are designed and for whom, then once you

believe that, then the next logical thing to think about is, how do we have symmetric analytic treatment of those systems?
How are we giving, exactly, as much attention and care to the social complexity around these designs as we do to technological complexity? Next slide, please.
So for me, whether I'm working with Intro 200 level students or mentoring people that are my peers as scientists, it really comes down to a couple of things-- asking questions about whose perspectives are being represented throughout the design process.
The concepts and lineage of intellectual knowledge that we're drawing on. Are we just talking to other technologists or are we also relying on what psychologists know about human behavior and sociologists and people with lived experience?
And then because it's technology design, we're frequently on the hook to really help everybody engaged around a design to understand what people are actually doing.
So activities, patterns and sequences of action, I spend a lot of time training people to think about those systematically and how we uncover them and explain them. Next slide, please.
So what about in STEM fields? Maybe this is great for engineers like me and my software engineering students. Does it have any applicability to you? Next slide.
So as Christine mentioned, I had the opportunity to work with more than 20 different data science teams at eScience Institute in the summer, a 10-week summer program we ran for 10 years called the Data Science for Social Good Program.
And one of the things that-- when you watch people, actually, do data science, applied data science for social good, what becomes very, very apparent is that how intimate, and close, and important, and inseparable that co-constitution of the social and the technical are.
So even when you're in the middle of building, say, a data science pipeline or designing an algorithm, there's really almost nothing that you can do to move that work forward if you don't understand who you're designing for, what their needs are, what their constraints are, what they're trying to achieve. And that comes up in every aspect of the work. Next slide.
And that process, I would argue, where you have to really think through things in a more systematic way and give this symmetric treatment, I would argue, is not always as necessary.

I think it's really important when we're thinking about pressing social concerns and civic concerns, like the applied researchers and the DSSGP For profit companies, they can target a single market and we might be happy with the results.

But the public sector is mandated to serve everyone. So we're on the hook for multivariate analysis. We're on the hook for a lot more when we do this kind of work.

So as human-centered design, it's one way-- I know everybody that's involved in STEM, we're all very much thinking about our own scientific processes that are from our home disciplines.

We're thinking about what matters to peer reviewers. And that's why people draw us into their projects and their work. And in some of those disciplines, the way that we engage with stakeholders, there is a mechanisms of transparency and accountability that we'll be asked.

But in a lot of cases, that's not always the case. It depends on the discipline. So human-centered design is one place-- it's one way to describe that meta process of anything else we might be doing to make our work more humanist, more centered on human needs and human values. Next slide, please.

Thank you. All right, so where does this fit into a STEM curriculum? Next slide. So the way that I think about this is two different trajectories and serving different populations of students that have different goals and motivations.

And I'm working a lot of times with students who really want to go into for profit tech sector, as well as students who really want a more mission focused career. Next slide.

So in the case of the University of Washington DSSG program, I was able to help work on this human-centered design curriculum. And I know that text on that slide is very small.

But what it's showing is that we were able to think through, week by week, where in an applied research project that centered on a public or social good, where there might be a need for human-centered design support. Next slide.

Again, thinking about that symmetric treatment and that co-constitution of social and technical. In this case, where the social and technical are applied research and practice, engineering and practice, and ethical engagement and practice.

And at the very bottom of that chart-- happy to share the a bigger version of this with those who like. There is a timeline across the project timeline.

And you can see those little colored squares are showing you where the human-centered design work is happening because it's actually at the integration of those different kinds of practices. That is where we are doing human-centered design. Next slide, please.

And to get back to what Bryan was saying is that that power of that 200 level class and where we're meeting students in there, that's yet another thing to think about. What is the touchpoint for human-centered design for every student that we encounter, wherever their trajectory is going to be beyond that?

And I love the way that Bryan talks about modeling that in the social atmosphere of the class and how we approach. I also think about it analytically. What are the questions that we wish that every single person that worked at DOGE asked every time about every social system that they encounter? Next slide, please.

So one of the things that I analytically-- an analytic blind spot that I'm always trying to skill up students on is this question of, who is influencing the design? And who is impacted by the design?

And to this idea of our theme, today, around preparing students for civic work and other kinds of work and thinking more broadly about society. That is a gap that I see over and over again. So students are pretty comfortable thinking about users, and companies, and maybe technology designers.

But citizens, policymakers, regulators, the role of civil society, these are blank spots that I think we can help students to scaffold and think more clearly about the solution, opportunities, and the ways that those interact intersect with the kinds of technology that would be human centered. Next slide, please.

And then when I have more time to work with students beyond the single module of one ethical question or one lesson plan for a class like computers in society, I am leaning heavily into the analytic and conceptual frameworks that are used in civil society and public sector.

So at the bottom there, you can see, in this analytic framework, that for a computers in society class, one activity here is stakeholder analysis, which we get lots of practice with because that is how in civil society public sector humanitarian response, this is an activity that helps orient teams of interventionists to figure out what the power dynamics are and have conversations around that. And that's an incredibly easy thing to bring into our classrooms. Next slide.

Another framework that I find really helpful is, as Bryan said, anchoring around values. I love a good menu of human values like Friedman and company, 2013.

This is a list of human values that could be enacted or constrained by technology. And so this really helps students to think more broadly and frankly, other interventionists. It helps me to think more broadly about the different kinds of values that might be enacted in systems that we need to look at and look at very closely. Next slide, please.

And finally, because I'm often teaching process-- design is about process, I really want to encourage students to be thinking about the fact that when we are truly, authentically committing to integrating multiple perspectives into the design, then we are-- the cadence of the work is going to look different.

What you see here in this double-- the double diamond of design, this is a way of describing a design process that was created by public sector designers in the UK, the UK Design Council after World War 2.

And notice how the discovering the problem and defining the problem takes as much space in this diagram as developing solutions and delivering solutions.

That is a very different mental model than many students and, in fact, many engineers that I've worked with have of how the work is actually broken down. But it's really essential, if we're going to make systems accountable to people, that we're making time to integrate people into that process. Next slide.

So whether you-- I feel empowered with my two degrees in human-centered design to say that human-centered design is work that starts everywhere and work anyone can do.

And the most powerful thing that I've learned in my time of mentoring different kinds of teams around this work is that the most profound thing happens in those conversations, what Bryan was talking about.

And we can start in the 200 level classes and make people really comfortable with these conversations throughout their academic engagements, right through their careers by just simply sitting people down and saying, how does human-centered design-- what does it look like in your work?

A couple of focusing questions, a little bit of time to have real conversations around it, a little bit of time to revisit those conversations. There's a kind of magic that can be

enacted through this simple process. And you can do it. You can be the person that starts these conversations and make space for them. Next slide.

I think one of the things that-- and again, I really love the emotional intelligence angle that Bryan comes at this work with because a lot of-- when we open up ourselves to really considering human needs, social needs, civic needs, then we're tangling with ambiguity that really feels-- especially for my engineering students, it's very stressful for them.

So I think it's really important that we model for students that the ambiguity is a feature. It's something that we have to tangle with. And that by tangling with ourselves, we're making things that are more impactful for people. Next slide.

I also really think-- and anchoring again back to what Bryan said, echoes of this-- that professional humility is really an important element. There's a lot of pressure. Students have to think that they need to come up with solutions right away or they're doing something wrong.

And we know for really pressing civic concerns, social concerns, we're all-- no matter how hard we work and how much effort we put in-- we're always only part of the solution.

And so I think it's really important to model for students that it's OK to work hard on something and only make a little bit of progress when we're tackling real, real, significant problems. Next slide.

And finally, I just want to land on this. Friends don't let friends do human-centered design alone. And I think this is a great thing for us to model and to lean into.

So I know that especially for engineering educators, some of the things that I teach are not the home turf. They don't always feel comfortable to everyone.

So having people that you have complementary skills and complementary interests, that is really how empirically we know that better things get built out in the world.

And so we can also make it more fun and easier for ourselves by modeling-- pairing up with people that have complementary skills. So I'm going to end there. Thank you.

CHRISTINE LATULIPPE: Great. Thank you so much, Bryan and Dharma. I do see one question in the chat about learning more about these models that were presented.

Dharma, some of your frameworks, are these links that you'll be able to provide us with and we can upload them along with our PowerPoint today? Is that something you can help us with?
DHARMA DAILEY: Yeah.
CHRISTINE LATULIPPE: Awesome. Thank you so much for that. And if anyone else would like to ask a question in the chat, I think we have a couple of moments. While people might be doing that, these ideas are coming together for my brain.
And I feel like Bryan really said that This I Believe project is one of his favorite ways to learn about his students more broadly. And I loved Dharma's mention of students being solutionists.
We often want to solve problems, those of us in STEM. You pass me a worksheet, I'm not even going to say hello to my group mates. I'm just going to start solving problems sometimes.
And I'm wondering if-- the same way we want to think about our students as whole people with more going on. If either of you has a favorite activity or project to help your students learn more about your field.
How to help our students understand that it's not just solving these problems on today's worksheet, but it's a set of, perhaps, skills or strategies that can help us solve these human centered problems and world problems. Do you have that introductory activity that you could share with us?
BRYAN DEWSBURY: Yeah, I can comment. Mine is not so much in that introductory activity. It's actually near the end of the semester. And it's during a week-- we, as in the class. We call it careers in biology week.
And just to give some context and backdrop for this. I found out through a previous study that a lot of students who are pre-med in biology majors don't actually know other careers they can pursue with a biology major.
And with all due respect to those who pursue medicine because that's a real joy and they want to do that for real. I'm happy for that. But I also think that part of my responsibility as a professor is to help students make an informed choice.
So I think an Intro Bio class is a perfect place to introduce them to the breadth of things that this discipline can lead you to, not just professionally but just in terms of problem solving more broadly.

So one activity that I have them do is I give them a list of scientists that I obviously cherry pick from different professions, different walks of life, different backgrounds.

And they do an individual write up, like two to three pages. They go and look up this person's history and their life story. And of course, the people that I pick, they exist in a repository. There's a couple. There's one called-- oh, my god,

Jeff Schinske is the author of-- why am I blanking on it? Picture-- OK, it'll come to me. But if you look up Jeff Schinske, S-C-H-I-N-S-K-E, it should be the first thing that comes up. I ran a series called Confluence, where as a grad student, we'd interview scientists who did nonprofit work, who did federal work.

So I would have the students then go and do that background research to let them see how nuanced, , and non-linear and in some cases, serendipitous their pathways were because those non-linear pathways are what led them to joy and inner motivation that they have to do what they do. So it's not at the beginning, but that's one example of something that we do.

CHRISTINE LATULIPPE: Thank you. Dharma, is there something you'd like to add?

DHARMA DAILEY: Yeah. I'm trying to teach the students to learn a process. And so it's really as much as possible leaning into experiential learning. And leaning into the assumptions that-- countervailing the assumptions that they come to me with.

So what's really foremost in students' minds is that they want awesome portfolio pieces. And they want things to look really cool. And it turns out that the way to do that most of the time is if you want a really cool-- I build this thing.

And look how cool it is. And my friends think it's cool. And maybe my employer is to actually short circuit the human centered parts of the project.

So for me, I've actually been leaning more and more into creating experiential experiences where I tell them, I'm not trying to give you the perfect design. I'm trying to give you the perfect learning experience.

So I'm leaning into experiential learning that exposes the problems of human-centered design instead of just giving a really slick step by step recipe that is not very well thought through.

And so, for example, I have an assignment that I'm doing with my usability and user centered design students. The first week of class that we meet, they have to do a diary

study, where they have to document any problematic issues that they have for five days with their internet.

They have to read a little something about UX dark patterns. And then they fill up the study. And inevitably, there are students who don't want to fill out surveys because most of us don't want to fill out surveys.

And then inevitably, there's going to be students that are-- we analyze the data together because that's a richer experience for the students. They learn more from us analyzing collectively. And part of what they learn is there's people that don't like to take surveys. We don't all have the same experience day to day.

And then we can build from there a more-- a deeper rooted understanding of what the relationship is between learning about people and what we want to learn. And that's not completely extractive. So I'll leave it at that.

CHRISTINE LATULIPPE: Great, thank you. We do have another question. Bryan, I'm not sure if you've noticed it.

BRYAN DEWSBURY: Sorry, yes.

CHRISTINE LATULIPPE: No, no. It's OK. So how do you make sure that the group work skills that you're teaching actually get implemented with your students-- by your students?

BRYAN DEWSBURY: Great question, Sarah. So the syllabus of the class is divided roughly into four units, the topical units. That makes the narrative of the Intro Bio class just land a bit more-- in a more connected way.

But also, it sets up some natural artificial checkpoints for major exams and for other things like that. Now, within each unit, there's a bunch of quizzes, and case studies, and things that require group work and individual engagement depending on how I set it up. But at the end of each unit, there is a summative exam of a relatively major exam. But also, each group fills out a peer evaluation form. And that peer evaluation form is carefully set up. It includes an evaluation of themselves.

And it's some Likert scale, but it's also-- there's a space for qualitative feedback. So if you're going to give Dharma 2 out of 5, just tell me why. We have this whole conversation. I have this whole conversation with them.

This is not set up as a punitive thing. This is set up so that there's a mechanism for the group to improve. Oh, by the way, the scores of that, it does factor into the final grade.

It's a very, very small piece. Very, very small. So you can't sink somebody's grade by giving them a bad eval, but I do want them to take it seriously.

One thing I will add to that as a point of context is at the beginning of the class, the first day of class, we actually, in addition to the guide posting, we do an activity. Basically, it's a math problem set.

And they take roles in their groups. And we go through this activity. And the point of the activity is to give them practice on how to work well in groups.

So they do five problems together, then they stop. And I ask the reporter to stand up, tell us what worked, what didn't work. And then they challenged to work to improve on the things-- improve on the rest of the problem set.

So it's not just all going to groups and then we'll evaluate you. It's like, no, no. We're actually going to talk through everything of what works well in groups, what doesn't work well before we get into it. And yes, then, is going to be some evaluation feedback of it.

CHRISTINE LATULIPPE: Thank you. Thank you very much. Would you be able to share the form that you use for student evaluations? And we can put it with the video.

BRYAN DEWSBURY: I will.

CHRISTINE LATULIPPE: Thank you. Great. So thank you again, Bryan and Dharma. This was really enlightening. We appreciate your time and knowledge today. And thank you to everyone in our audience who joined us.

Please visit the Transform Learning website to learn more about the eight evidence based teaching practices. And we encourage you to consider submitting an instructional example from your own teaching that illustrates one or more of the eight evidence based teaching practices. Thank you.

NORMA HOLLEBEKE: Thank you all to our speakers. Thank you very much to Christine for moderating. Thank you to our audience. And for our audience, we ask that you take just a few minutes out to complete our survey, although we have learned that some people don't like taking surveys.

But we really get valuable feedback if you all do provide information on those surveys to us. The link is being posted in the chat for you. If you've got something else going on immediately after the webinar, don't worry. We'll send you the link to the survey in a follow through email that you'll get within the next day or two.

So we really do appreciate everybody attending today. We appreciate the time of our audience giving us. And we really appreciate Bryan and Dharma's expertise on this matter. So we hope everybody has a wonderful day. Thank you very much.