

Mark Royce (00:00):

Hi, Erica. Hi, Molly. How are you guys doing? I, uh, I'm excited to talk with you guys because, , Molly, Erica told me about you as a student and, and, , she had kind of a special place, I think, for you in her heart. She's told me about the fact that you've gotten involved at a level that's much deeper than most students get involved with, with understanding modeling instruction. So I'll let you guys tell the story about how this all unfolded. Okay. Let's start with you, Erica. Let's hear your perspective.

Erica Posthuma (00:40):

Um, so Molly came to our school as a freshman, but she had already taken biology, which is uncommon for, um, for our school. So she came in, uh, and as a freshman, she took my chemistry one class, which then prepped her for organic her sophomore year. And then she took AP chemistry, her junior year. And then, um, that's all the chemistry that we like traditionally offer at our school. So, um, Molly approached me at the end of last year, which, um, was, uh, it was an untraditional spring semester, being the spring of 2020. And, um, she asked if we could do an independent study project where she was going to do, uh, some research, um, and, create a project, uh, surrounding chemistry education, um, which I was excited about. And we talked about, some different ideas that we had and then, uh, with the pandemic, all of our modeling workshops moved to virtual. And while that, that posed some really big challenges for us as facilitators and our teachers as learners, it also opened up some opportunities and one of those opportunities was to allow Molly to non traditionally intern for us. Um, so it's the first time I think that we've had a high school student actually intern with two seasoned facilitators for workshops. And so she kind of got to see like how the sausage is made. Like, what does it mean? Um, you know, what, what is the training that goes into someone who's being taught the pedagogy and, uh, what did the discussions look like? Um, from the teacher perspective? And then Molly was awesome and she, you know, shared her perspective as a student. Um, she participated in our discussion. She helped in our planning and, um, it was a really rich experience for, my teachers and for, um, my facilitator and I as well.

Mark Royce (02:51):

Molly, Erica mentioned something there that's, that's important for you to share with our listeners who are mostly teachers, your perspective as a student sitting under modeling instruction in the classroom. Can you tell us a little bit about what that was like and what your perspective now, let me clarify something. Erica, do you guys do the, um, chemistry? It usually as a sophomore? Yes. Okay. So you do physics first. We do biology first biology first. Okay. Okay. So Molly kind of threw a monkey wrench in your system as far as the way she went through the process, but Molly, when did you start, uh, learning under a modeling instructor?

Molly Bickle (03:38):

So I started in my, um, chem one class with Erica my freshman year. And that was like my first kind of, that was obviously my first exposure to modeling. Actually I had never, I had come from a public school that had taught science in a very traditional way. And so that was kind of my first immediate reaction to that class was not only the content, but just the way it was taught was so foreign to me from anything else I'd ever experienced in a science classroom. Um, so as I continued to take those chemistry classes and also my interest in education itself kind of grew, I, the combination of the two just came really naturally to me. And so I began to kind of take note of what my experiences were and what my perspectives were, just so that I could kind of take that back, um, to the pedagogy. And obviously this experience was amazing to be able to intern with that class over the summer and kind of, I would kind of keep mental logs during that class of what this experience was like or what this activity was like and kind

of, so I could take that back, um, and remember what it was like the first time I'd experienced it, but it was really, I mean, off the bat modeling was great for me and that's kind of why I stuck with that as my interest, um, because it was such a good experience for me and a lot of my classmates too. And so it was really great to be able to like go back and kind of see where it came from, see why it was the way it was and, um, how it was taught to like how teachers went through that transformation of being, of use being used to teaching out of a textbook in a very standard way to kind of this new, completely new idea of how to teach science. So that was really, really interesting for me to be able to see

Mark Royce (05:29):

You said it was a really good experience for you. How so? How, why was it, what was it about modeling instruction that worked for you?

Molly Bickle (05:38):

I really liked how you couldn't really be inactive. You had to be an active force in your own education, if you wanted to, because you couldn't just regurgitate information to get the A, you had to demonstrate your understanding and you, couldn't not Devin. Like you had to be active and actually retain the information and retain the process so that you could re-enact it in your own words and in your own style so that you could really understand it and at your personal level. And I also really liked how you could go as deep as you wanted or as surface level. So for my friends who are not science, people who were not, you know, inclined to that kind of thinking, they could still understand as much as they needed to. And they didn't have to do the like super deep level of interest that as a science student I wanted to do. So it was kind of a, you could take as much as you wanted. So if you wanted, you know, yeah. Kind of that same idea. If you wanted to go super deep, you could, if you didn't, as long as you got the concepts, which were so much more generous in modeling than they were in traditional learning for me coming out of a traditional biology class, I'm not a biology student. And I still, I mean, like I was thinking the other day, I couldn't even name a single phase of like my ptosis. I'm surprised I even remember what my ptosis is, but in modeling the way that they do chemistry, you don't have to remember the name. Like it's less about the names and the definitions and the specific terms. It's more about the ideas. And that's so much easier for non-science students to understand the concepts and work through it logically than just memorizing definitions. So that's why it really worked for me and a lot of my friends. So yeah, that was why I was so much better than like I ever going to chemistry. Like I was like, Oh my gosh, I love this so much. I have like, this is so great. This is obviously my favorite class. And then I was like, Oh, so I do like science. I like that method of discovery. I was like, I totally didn't think I was a science kid. And then modeling taught me that I definitely was.

Mark Royce (07:47):

Wow. So, okay. Before you got introduced to chemistry through this experience, what were you thinking about becoming, what were you, what was your path? Where were you headed?

Molly Bickle (08:01):

Oh, gosh, I have no idea, but science definitely was not an option for me. Um, before this, I had taken a few science classes and it was kind of the teachers I liked were the classes I liked. And if I didn't like the teacher, I hated the class. But, um, it was also really like, it was really weird for me to then start to think of science as a possible career path for me anyway, because yeah, it was just a door that was previously closed to me because it just wasn't interesting. And it was seen, it was also taught as something stagnant. So I didn't science, wasn't really something that I could interact with anyway. So when I was

thinking of things to do with the rest of my life, or even like the next couple years, it was kind of like, well, everyone's discovered what's needed to be discovered in science or at least of all the things I was being taught. So, um, like my attitude toward that was definitely changed in modeling because of the way that it's taught also in this chronological order of discoveries, you can kind of see that there's going to be more, you know, the narrative doesn't stop at the end of the year. We just ran out of time. So it's kind of like that sort of way that students have to interact with science doesn't end. And I think that it was really cool for me to be able to like, see that just like other people did this. I could one day, you know, make this discovery, or I could interact with science in a way that was more of just, I had to take this class because it's a credit.

Mark Royce ([09:32](#)):

How do you, see your career unfolding at this point? I know you're just getting ready to go to college. Uh, what, what are you thinking now

Molly Bickle ([09:43](#)):

Right now? I definitely, um, my passions, definitely an education. I love the idea of our brains and the way that they grow and the way that they retain and take in new information is just completely amazing to me. Um, I definitely think then I will go into education, but I want to get my undergraduate degree in chemistry in a field of study, because I think that the best way to teach students is with, um, with real knowledge on the subject. And I know that Eric has degrees in chemical education, which is great. I do not want to diminish that. That is an amazing achievement, but personally I just, um, I really want to get in that field. And eventually I really want to teach science to, um, non-English native speakers in their native language. So, um, specifically Spanish for me, but I think that we can, um, subjects in STEM, science or chemistry and math are not in language. They're not in a language, the periodic table isn't in English. It just is, you know, chemical equations aren't written in English. So I think that it would be really cool to take those kinds of pedagogy and techniques and transform them into French and Spanish in those other languages. So that when students move to the U S our public schools can change the narrative and not have it, have it be so that they have to learn English first for them to learn STEM so that they can learn STEM while they're learning English. And therefore they can be given more equal opportunities in those STEM fields and still advance and make their contributions without being hindered by not knowing English first.

Mark Royce ([11:23](#)):

Wow. What languages do you speak?

Molly Bickle ([11:26](#)):

So I'm learning Spanish. I definitely wouldn't say I speak Spanish, but I'm in my fifth year of Spanish right now. And it's something that is also really, I'm also really passionate about. So right now the plan is to double major in Spanish and chemistry. That's very ambitious of me. So we'll see how that ends up.

Mark Royce ([11:47](#)):

So, Erica, um, you had Molly for that year, uh, in school. And, uh, tell me about your relationship, how it grew, what it looks like today, how your role as a mentor, I would say most likely, uh, has evolved. Tell me a little bit about that.

Erica Posthuma ([12:11](#)):

Um, Molly was as well, Molly was one of the younger students that I would have taught because I normally don't see kids until they're sophomores and Molly came in as a freshman, um, and very energetic, um, and very excited and very willing to engage in the process of, uh, um, of modeling and what that means in a classroom. Um, Molly, wasn't afraid to share her ideas and, you know, one of the, one of the roadblocks that we sometimes come into with students is that they are very afraid to be wrong. And in modeling, you're going to make mistakes like in, well, in any class, you're going to make mistakes, but in modeling, you know, we're building these models. And then the whole point is to test them until they fail. At which point, then we need to adjust our model to, to accommodate new information. And so that's really intimidating for, um, many students, but, you know, when we can get them to buy into this idea, that failure is part of the making mistakes and failing is part of the learning process. Then it really opens them up not only in, in, in our STEM classes, but beyond, um, if you're willing to put yourself out there. And Molly was, um, and then I was SU I was like super excited when she took my organic class. Uh, it was organic and food chem. And that was probably one of the, that your specific class was probably one of my favorite classes that we ever taught. It was just so fun. Um, that class is an elective. And so we have a lot of freedom there. So I let the students, um, sort of guide that, especially the second semester, which is food chem. So we like lay the foundation for, um, biochemistry. So organic is my first semester, and then the second semester is transcribed as biochemistry, but we teach it through food. Um, but I let the students sort of guide where we would take that. Like what w what did you want to learn about? I'll go and I'll go learn at first and then we'll come back and we'll talk about it. So that was kind of cool. Um, and then, you know, getting to work with Molly the summer and, uh, kind of hang out as colleagues, um, was really nice. And, uh, then I think that, um, you know, we talk about things outside of science and chemistry as well. We talk, we've had conversations about what it means to be a woman in this field, uh, what it means to be a feminist, what it means to stand up for equality, um, what it means to, you know, the, the responsibility that I feel as, as a female role model in science. Um, and it's just, it's nice to, to see all of the work that we put in to hopefully improving the next generation of students coming up. Um, it's nice to see that kind of come to fruition in people like Molly.

Mark Royce ([15:11](#)):

Molly, I'm curious about your perspective on, uh, women in science and women in primarily, uh, male dominated fields, uh, your age, your, uh, how old are you if I could ask, how old are you? I'm 18. You're 18. Okay. So tell me your perspective as a person of your generation, uh, women in fields that are primarily have been, uh, male dominated over the years.

Molly Bickle ([15:43](#)):

Yeah, well, my perspective is unique right off the bat cause my mom is the main actually the only breadwinner in my household and has always been for my whole life. So I already kind of grew up with this idea that women can be the main breadwinner and have whatever job they want, but my mom doesn't work in STEM. So I still kind of the first time that I kind of felt like, Oh, there's a man in this classroom who thinks that his opinion is better than mine solely based on the fact that he probably thinks he's superior to me because he's a man and that's fine. I mean, high school boys are going to be high school boys anyway. So I try not to make it like reflect a reflection of the whole field. Um, but the reality is I know that I probably will continue to face that, but I also know that I'm strong enough that I can. So it's definitely not been a hindrance for me because I just don't care about what people like. I know that I'm going to face those ox opt, excuse me, obstacles. And because I have strong role models like Erica and my mom and other people that I know have done it before. I know that I can, and I'm strong enough that I can, but it's definitely something that I know holds other like some of my female

classmates back, because they know that they can't really, they feel like they can't voice their opinions because we have guys in our class who do think that this is their field and that they shouldn't, you know, have to listen to this girl who thinks that she's the smartest one in the room. Cause obviously they are. So if there is kind of this back and forth that you always go through, but I think that it's definitely different now than it was five years ago, 10 years ago, 20 years ago. And I will, yeah, I still think it's a battle, but we definitely have more tools to fight it now. And I'm excited. I mean, and anonymously makes me kind of excited. Like I think that it's such a great time to be a woman in STEM and I'm really excited that I am gifted enough to go down that career path and that I have the, like the skills that I need to do that. So I don't know. I think that it's like time for us to get over those male dominated field things. And even like female, like one of the reasons I love education, but something that also goes through the back of my head is, well, if I like become a teacher, all like that's going to be the thing is like women just become teachers and men are the ones that become the scientists and women's are the women are the ones that teach the material. And that's definitely something that like I think about because I want to go into education, but at the same time, I have to think like I would have to do what I want to do. And I can't think about those gender roles and those gender stereotypes, because people are going to think those things no matter what, so it's hard, but I don't know. I like to think of it as kind of something that was around or that's something that could affect my life if I wanted it to, but I'm ready to fight the battle so that it doesn't,

Mark Royce ([18:50](#)):

That's such a great attitude, Molly. And, uh, I want to really, uh, encourage you to keep going. Cause, you know, I, I think you're right, it's an old paradigm that needs to go away. Talent is talent. It doesn't matter the gender. And, uh, but you know, you're obviously a really talented young lady in your field and, um, boy, I I'm encouraged to hear your attitude toward it. It's really cool. Uh, so tell me about your experience, um, in, in the workshops, did it w did you, Erica, you took Molly to one of the workshops. Was it a face-to-face or online, or?

Erica Posthuma ([19:41](#)):

It was a, so it was this past summer, summer of 2020, and it was all done on zoom. So, um, we, Molly and I, um, and our, my co-facilitator, we all live in Indiana and at the time we were in various stages of a shelter in place and core team. So, you know, we were not, um, you know, we were in different locations, my co-facilitator and I were in the same, in the same space, but Molly was at her house. So, and then we had, we had participant participants from all over the country, uh, several from the Houston area, which is where the workshop was supposed to be. Um, but because it was virtual, we got to meet, um, a variety of, of teachers from all over the country. Um, which wasn't, which this was the first summer that some of those teachers had the ability to attend a workshop because it was virtual. Right. So, um, so, so Molly got to, while she, we weren't in a face to face workshop, we were still, we were still in workshop. We were just workshopping from home.

Mark Royce ([20:50](#)):

Right. Yeah. And so what was that experience like for you, Molly?

Molly Bickle ([20:55](#)):

it was awesome. I was, I loved it. I mean, I got to meet so many cool people and it was, it was the first time that I had kind of had that experience where I was obviously seen as all of them as a student, but at the same time, they were so respectful and so like willing to listen to me and listened to all my ideas and

not think, Oh, she's a student. She doesn't really know. Or like, think that my opinion would be less than either Erica or other facilitators or them eat each other. Like I was totally seen as someone with a very valuable opinion. And that was really, really awesome. Um, it was also great to like meet so many people in so many different circumstances. We had first year teachers, as well as seasoned teachers who were all just trying to improve their and trying to improve at their craft. So that was really encouraging, you know, there's this narrative that teachers like to just do what they do for 50 years and never improve, but that's was proven completely false. I mean, these teachers were constantly trying to get better, even teachers that had, um, attended the workshop multiple times before were still coming back to be better and get better for their students. So that was super awesome, but it, yeah, it was just a great, I mean, it was awesome. I felt like I was able to kind of like Erica said, see how the sausage gets made. And obviously I had experienced the curriculum, but it was great to be able to be like, Oh, so this is why we did that. And like the hidden meanings behind everything. So it was, yeah, it was great. Definitely a great way to spend a summer that I would have just sat in my room and quarantined. So can't complain about that.

Mark Royce ([22:44](#)):

What were your, uh, top two or three things that you learned in the workshop that you kinda tuck away and you're gonna take with you into the future?

Molly Bickle ([22:55](#)):

I definitely learned, I kind of learned why it's so important to give students choice in how they want to express, you know, there, we did a lot of drawings and a lot of them explaining their own narrative and kind of the process of why modeling does that and why it's so important for students to be able to choose how they want to, um, express those ideas was something that I definitely will like keep in my back pocket. Um, what else? I thought it was also really cool how the teachers interacted with, you know, every teacher did took these techniques and did put their own spin on them, did them in their own styles. Not that, that was really cool. There was, I mean, there's no one size fits all. Um, so it was really cool to see how some teachers, especially like some teachers that taught in different environments. For example, we had a teacher who taught on a native American reserve. So the fact that he kind of manipulated some things to make it best fit his environment, um, was really cool. So yeah, definitely like the important of student choice and then just how teachers can add their own personal style into whatever we were doing.

Mark Royce ([24:13](#)):

So Erica, when you're teaching one of those, what are the things you're hoping that your students will take away?

Erica Posthuma ([24:14](#)):

Um, so, well, one thing I wanted to add to what Molly was saying was that, um, so many of us she's correct in saying that some of the teachers had taken our workshop before and they had come back. But the majority of the teachers that were in that workshop were learning about modeling for the first time, which put Molly in the very unique position of being more of an expert on the topic than the teachers who were there. And so these teachers who were, um, putting themselves out there and in vulnerable positions and admitting like, Hey, I'm not the expert in the room this 18 year old might know a little bit more about this than I do. And they engaged in it, which was I think, a tremendous learning experience for, for our teachers. Um, you know, getting to not only hear Molly's perspective as a student of

modeling, but also hear Molly's perspective as a potential educator. And she's, you know, she thought about teaching and the process of teaching. So, um, I thought that was neat that even though she was by far the youngest one there she knew, knew about, knew a lot about it,

Molly Bickle ([25:30](#)):

There were even moments when like teachers would do, we would be talking about these obviously really simple, simple with quotes ideas of in chem one. And then these teachers would be like, well, wouldn't, you have to include X, Y, Z really advanced theories so that they can understand how this worked. And I had no idea what they were talking about, and this is after I had taken AP chemistry. So I could kind of, it was really, I felt really proud that I could look at them and be like, no, you can totally understand this without doing that. Trust me, because that is going to confuse them. And if I don't understand it, and I've been taking three years of chemistry, they're not going to understand it two weeks into their first year. So like being able to kind of be that for them to be open to that reality check and to be able to tell them like, yeah, your students are not going to get this right. And then like being able to like help them to make it so that it would be more accessible to their students. Because I mean, yeah, it's been years since these people have taken their first year of chemistry, so to kind of go back and be like, they do not understand that idea yet you have to take it so much simpler. And so that was really cool for me to be able to see that then kind of see the levels of chemistry that I will eventually study hopefully. So that was really cool to kind of have that back and forth too.

Erica Posthuma ([26:50](#)):

Yeah. Yeah. Cool. And that's one thing when you asked earlier, what do I want my participants to take out of the workshop? I think that Molly touched on it right there. Um, you know, in, when we talk about how students learn and how they construct meaning one, um, you know, one thing that we run into as teachers is that we know too much about the topic and you know, I've been, um, I've been doing chemistry longer than Molly has been alive. And, So Um, it's sometimes it's hard to go back and remember, what was it like before I knew what this meant? And so when we think about Johnstones triangle and the three, the three, um, representations presentations that we have to move between when we talk about chemistry and that is the macroscopic, um, the symbolic and then the particulate level. So as, as experts, I can make those connections seamlessly in my head. And so if I write one F E plus one Oh two on the board, I know what I mean. But to a student, they could be like, is that one molecule? Is that one, Adam is that one gram is that one mole like w you know, the, the expert can make, make these connections and flow between these representations seamlessly. And so to be able to help our teachers recognize that and, and show them well from a student perspective, that's not always clear. Uh, so that's one thing. Um, and then really showing teachers that students have agency in their, in their knowledge, they have agency and in how they construct meaning, um, they don't need to listen to us. Like they can come up with, like, they can, they have their own ideas. They, they build, they don't, they don't come in as blank slates with us. They come in with vast amounts of knowledge. Um, and some of it is perhaps, you know, based in misconception that we need to get to, and to try to understand why. And instead of the idea that rigor is equivalent to breadth, I think is incorrect. And I think that my class, although maybe I don't get into, um, kinetics in my first year, and I, you know, my first year chemistry, we don't talk about hybridization, but my students learn how to reason and they learn how to think. And so when they are presented with those higher level concepts, they can, um, they can reason through it, on their own without so much direct instruction from the teacher.

Mark Royce ([29:37](#)):

Hmm. Yeah. So, Molly, I'm curious, you going into high school, you didn't plan to go into education or science.

Molly Bickle ([29:46](#)):

Yeah, I think at the time I wanted to be a lawyer, which is really shocking to me now. Cause I don't like reading, but,

Mark Royce ([29:55](#)):

So what was the, what was the point where you shifted?

Molly Bickle ([29:59](#)):

Well, I mean, I've always kind of wanted to do education, but had closed that door for myself because of the other factors. And I thought I could be more and do something, you know, because education in our society is seen as such a, it's something that somebody has to do. And it's kind of one of the easier things. But when I kind of had that shift of seeing teachers, I'm really blessed to go to a really great high school with amazing teachers that continually try to get better at what they do are really engaging with their students. And when I kind of saw education in that different light of not something that teachers people did because they needed the money or something that teachers did because they wanted like, I don't know a retirement job or something like that. But when I saw it as something that people did because they were passionate about their subject and passionate about teaching people, how to be better, how to better themselves and stuff that they're really passionate about and how cool that can be is kind of when I made that click in my brain that, yeah, I mean, it doesn't matter what people think about my career. If I love what I do and I, the P if I'm good at it and the people I'm teaching think I'm good at it, then who cares? So that's when I really started to like, let myself kind of think about that more seriously. And especially with science education, when I saw that there's a real need for good science teachers. And for those, the advocates that they can be for their students and for good student advocates and for good education and how, yeah. How much there's a need for that right now. Um, it was kind of when I was like, yeah, okay, I'll do it. Why not? It's something that I love to do. And yeah, I've always kind of had a passion for how our brains work and how students can learn. So it was a slow shift, but now I'm pretty settled and I'm, I applied to all my colleges with the intent to do that. So I hope I don't change too much.

Mark Royce ([31:59](#)):

Wow. That's very exciting to hear, actually, we do need more teachers with the kind of attitude that you have. Um, Erica, are you, do you have some thoughts that you'd like to share with our listeners about what it means to find a student like Molly? I'm sure she has, uh, brought some influence to your classroom, you know, as a student in the classroom and how that influence works with your other students. Um, any, any thoughts along that line?

Erica Posthuma ([32:40](#)):

So Mark, you can help me out if I ramble too much. Um, what, when you first asked that question, the thing that comes to mind is teaching is really, really hard. Um, it takes a lot out of you emotionally and, and you really, if you, when I teach, I feel like I put a lot of who I am into what I do. And so when something doesn't go well, or, you know, I feel like I haven't done my best. It, IT it hits real hard because I put so much of what I am into this. And I believe in it so completely, like it's part of my identity. And so it's really hard when it doesn't, when you feel like you're not doing your best, which I can speak for



myself in many, in every one of my friends, who's a teacher right now during the pandemic that this is not a great time to be a teacher. You know, we don't feel like we're doing what is best for kids because we can't in, in the current climate, we just can't, there are too many things, um, you know, effecting our safety that preclude us from being able to do hands-on labs and interact with our kids in the way that we want to. So it's been really, really hard, Um, in normal Years and, and in this year as well. But when you come across a student like Molly, who reminds you, why you're in the classroom and reminds you, like, when you see, because Molly's very emotive. And so like, you see her get confused, but then when it clicks and her eyes literally like light up and like her smile, um, when she gets something and she gets so excited when she understood something and it was like opening a door for her, like you could see, like, you watch the process, right. And it's, it's Molly, but it's also other students that I've had that, that go through the same thing. Like when they start to believe in themselves and understand that, like, they have the ability to, to do these, to do this, to, to like they see themselves as scientists when they never saw themselves as scientists before. I think it builds confidence. Um, not only in, in my class, but outside of the classroom, it shows them, um, no, like your voice is important. And so what you have to say is important. And if you, if you have an idea or you disagree with the teacher in the room and you like, and you have evidence to support your position, then share that, um, you know, if you read something and it sounds like the data's not being interpreted correctly, say that like, you know, and, and take that stand beyond, you know, these skills go beyond the classroom. Um, you know, like Molly, did you do any of the, did you participate in the protests or what did we do last year with, um, was it the gun control walkout? That's the walkout. Yeah, yeah, yeah. Control walk out. So we had students that we have lots of students at our school that are, um, politically active and will, uh, organize protests, walkouts, things like that. Because, um, because I think our school does a good job of empowering students to understand that their voice is important. Um, which I think modeling does as well. Um, so yeah, I think that it's just coming across students like Molly, that remind, remind us why we do what we do and get us through times like this when man, it's rough going to class every day.

Mark Royce (36:26):

Yeah. Yeah. So Molly, do you feel like that sometimes your inquisitiveness and your activity and your engagement in the classroom, uh, influences other students positively negatively? You know,

Molly Bickle (36:46):

I hope it does. I've heard from my teachers that it does, which has really given me the confidence to continue to pursue it, but I've always been a really loud kid and I've always been a really curious kid. So I've never like actively made the decision to like, yeah, today I'm going to raise my hand or today I'm good. You know, that's just something that comes as second nature to me. Um, but I've definitely noticed that, you know, sometimes I, and that's why like, looking back and kind of I'm at this point now where I can look more introspectively at my role as a student and being able to be like, Oh yeah, you should raise your hand. When I'm talking to, you know, having a side conversation with a student who doesn't understand or something like that, like, you know, you can take that kind of encouraging stance to encourage other people to be active because I don't really need to engage in my indication any more than I already do. So I'm kind of like trying to now take that step back and help others kind of be that voice for themselves. Um, but even before I started, you know, kind of looking at it like that, I've, I think it does. Cause as much as a teacher can create that kind of culture for their class, the student has to engage in it as well. And the more students that engage in that culture grow it more and nurture that culture so that other students who maybe wouldn't have done that, feel comfortable doing it because people do it every day. So I know that like I have a friend who's like, Oh, I never want to talk in class because everyone's going to be paying attention to me and whatever, whatever. Well, if you're in a class

where, you know, someone like me is doing it all the time, then you kind of notice how not, how little of a deal it is and how it can just be something that you do offhandedly and then everyone moves on and you all learn more. You all learn better because of it. So I hope that I have been a positive influence on my classes. I've tried not to be the student that takes over. I probably have at least once I know, but overall I hope that I've been more of a positive influence on my classmates.

Mark Royce ([38:55](#)):

Yeah. Okay. That's great. So, um, modeling instruction has impacted your life. And as you go into and in to education, do you see yourself in a situation, a classroom where you would employ modeling techniques in your instruction and practices?

Molly Bickle ([39:14](#)):

Yeah, I mean, I hope so. I think there's so many things about modeling that are not specific to modeling, but are, but are specific to good education. I mean, that kind of engagement level that you get with your students and modeling is not matched by any traditional Mo most traditional techniques of teaching. So it's kind of like, well, am I going to ask my kids to draw diagrams of things that they don't understand? Of course, like, that's how I'm going to point them out for, you know, give them feedback. And I think that it's such a great way modeling has made such, has made it so easy for teachers to understand how they can implement these, you know, these ideas that seem so hard to implement in their classrooms. But it, I don't know if I'm making sense right now, but I think you can understand what I mean, it's like these, you know, asking your kids to like draw a model and then having to create feedback for them can seem like such a weird ambiguous idea, but bond building creates the guidelines and the roadmap so that teachers can feel like people have done this before. It's been, you know, it's been used and it's been reworked and it's been improved. So it is a lot easier for them to have, to, to follow modeling than pioneer their own method of new, you know, ways that they can improve their classroom. So I think that's really cool. And I hope that I'm in a position where I can use some of the modeling techniques with my students, but then again, I don't know what the classroom is going to look like by the time I get to one. So we'll see.

Mark Royce ([40:55](#)):

So the answer's yes. Yes. That's awesome. You're great. Well, listen, this has been a blast and, um, it's been such a pleasure to have you guys with me and, and this discussion has just been a real joy and, uh, Molly, thank you for taking a little time to talk to us about your experience. You know, you're our first, uh, student that's been on the podcast and it's been really fun. And Erica, thank you so much for introducing me to Molly and, uh, and to our listeners, uh, she's a real joy and a breath of fresh air and an encouragement for the future. Uh, you know, she's, uh, we're, we're excited to see where your career goes, Molly,

Erica Posthuma ([41:47](#)):

Thank you. Well, I hope I'm not the last student. I hope this went well,

Mark Royce ([41:52](#)):

I think we'll do this again. So those of you who are listening, let's, uh, you know, if you have a student that you'd like to bring along with you as a teacher student and, and we can talk to about their experience in the modeling classroom, that would be great. So I'm going to let you guys go. Thank you so much again, and, uh, just remember to be awesome. Thanks Mark. Bye.

