

Mark Royce ([00:00](#)):

Hey, Karle, how's it going?

Karle Delo ([00:02](#)):

Hey, Mark. I'm good. How are you?

Mark Royce ([00:04](#)):

I'm good. It's been a while since I've talked to you.

Karle Delo ([00:07](#)):

Yeah,

Mark Royce ([00:08](#)):

I think it was right at the beginning of 2023 that we last connected. And I had you and was it Erica?

Mark Royce ([00:21](#)):

Erica, yes. Yeah, it was you and Erica that we all three chatted together about modeling, which was cool. So you've been very busy and doing a lot of cool stuff, and just in talking with you recently found out that you've become very focused on AI and how it can be integrated and implemented in the classroom. So I do definitely wanna spend some time today talking with you about that. I know a little bit, I think everybody's heard about AI now. I mean, it's the big topic in the news and everywhere it seems like. And Chat GPT, is that what it's called?

Karle Delo ([01:09](#)):

GPT. Yep.

Mark Royce ([01:10](#)):

Yes. I know very little about it. I know a little bit. I did a chat GPT thing on my phone and asked some questions and it was kind of cool. Can you kind of tell us a little more about what AI is? I know a lot of people listening probably know some, some may know more than others, but I know some of us probably aren't that aware of exactly what AI is and how it's being used and what chat GPT is and how it's being used. Can you give us a little overview of what that's all about?

Karle Delo ([01:48](#)):

Absolutely. So, the first thing I'd like to share with people is that you have probably been using artificial intelligence for a while. You're just not always recognizing it as that. So there's a difference between AI and Chat GPT and some ways that we use AI every day is if you use Grammarly or if you use spellcheck. When you're typing on your phone and it finishes, it offers to finish the sentence for you. Those are all examples of AI. And also, if you even think about if you open up Netflix and it's suggesting shows for you to watch, or Amazon suggesting products that you might like, that's all artificial intelligence as well. So really, AI has been around since about, since the eighties, in some way. And it's just whenever a computer acts like a human in any way, that's considered artificial intelligence.

Karle Delo ([02:49](#)):

Chat GPT came out in November of 2022 and really changed-- It really shook up the world. It really shook up the world of education as well. Because what Chat GPT can do is it can generate human-like text, and it's not just a couple of words at the end of the sentence. It's entire paragraphs or essays or things like that. Without getting into too much, the GPT stands for generative pre-trained transformer. And so generative means that it's creating text, pre-trained, meaning that it's trained on the internet and this vast amount of information, which is why it was so different than other things that came before. The transformer just stands for the neural networks, kind of like how a human brain works.

Karle Delo ([03:50](#)):

But what I'm excited to talk about with this community, with the modeling community is Chat GPT is a large language model. It's a model. The quote that's used often in modeling is all models are wrong, some models are useful. That goes for AI and large language models like Chat, GPT and Google Bard is another one. There are ways that it is wrong at times, but it still can be an incredibly useful tool. So that's a quick overview of kind of the, what it is.

Mark Royce ([04:35](#)):

You know, I hear a lot of talk about the fears people have about AI coming in and people losing their jobs because of it, and companies downsizing, firing people, and just using AI to replace people. But I've also heard others say that's not going to be an issue as much as the fears may be. What do you think about that? And let's talk specifically about teachers. Do we need to be fearful of losing our jobs because of the implementation of AI?

Karle Delo ([05:13](#)):

So, you know, whenever there's a new technology, there's usually fear surrounding that new tech, which is normal, and understandable. And it will certainly shake up what jobs look like in the future. It will probably change how we look at education in the future. But I firmly believe, and a lot of other people who are experts in this field as well, they believe that teachers do more. The job of teaching is so complex. You don't just say, here's some knowledge, here you go. We don't just give knowledge over to kids. It's not that simple. I didn't come up with this. I've heard it online, teachers do more than just hand over knowledge. They guide the social process of learning.

Karle Delo ([06:09](#)):

And we saw during the pandemic that learning from a computer, when students are just given a computer and they're told to learn from it, that's not very helpful, even when there's a human on the screen talking to them. That's still not a very effective way to learn. So I think that idea of teachers guiding the process, and it's a social process. I think that's really important to keep in mind, when thinking about AI. That being said, there is a school in Texas, a private school, that is already trying to have teachers as facilitators and have AI be more of the teacher. Now, the question you should ask yourself is, would you want your kids to go to that school? I think a lot of people would prefer a real human teacher. So for now, I do feel that teachers still have a pivotal important role.

Mark Royce ([07:16](#)):

It seems to me that in modeling instruction especially, it would be really hard for a machine or AI to do it. 'cause like you said, it's not just about imparting knowledge, but it's about leading the students to think for themselves to question and devise hypothesis. And, you know, the whole idea of Socratic

dialogue. How would AI do that? I mean, I don't see how it could possibly be as effective as a well-trained instructor.

Karle Delo ([07:51](#)):

I agree. Science used to be viewed, um, in schools as kind of just a set of facts and information that you should remember. That's the days of the textbook. And that guided our instruction. Those days are gone in, in many science classrooms. I think with good science teaching, it's not just gonna come from a textbook. So I agree with you. I think that the teacher plays that pivotal role in guiding the inquiry process and getting kids to really think like scientists. I taught middle school science for 10 years, and for four of those years I used modeling instruction. And it was like everything clicked. Like everything started to work and make sense, with how science should be taught. And I started using technology a lot less when I started modeling instruction.

Karle Delo ([08:55](#)):

And I think that was good for my students. I think it was good for me. But I think that AI can help teachers, not only just -- A lot of people think, oh, it could write an email for me, or it could write a letter home or something. But it also can be your brainstorming buddy. So it can be a thought partner and someone to help you think about for example, a driving question or real world phenomena for whatever your standard is. Those are things that we know we should be doing in science. And they're really helpful for students, but takes a lot of time for teachers to think of those things. And you could use AI as a thought partner for generating things like that. Even sample data sets, uh, for students to practice analyzing. That's something that takes a lot of time for a teacher to create. And, we could give students additional practice by using AI tools.

Mark Royce ([09:59](#)):

Gimme an example of specifically how a teacher would use AI. And then also an example of how Chat GPT -- How specifically would a teacher use those tools in their preparation and in the classroom?

Karle Delo ([10:23](#)):

So, I think, one great way to use it that I've found is coming up with ideas for lesson hooks, for ideas to relate the content to your students specifically. So, for example, I work in a rural farming community. And there's an AI tool that helps make it relevant for your students. It's called Magic School dot ai. It's free for teachers. And I could put in a science standard and ask, how does this connect to farming? How does this connect to students in a rural community? Maybe I have a lot of students who love video games. Right? Who doesn't? Or social media. And I could ask, how could I connect this concept or this idea to the world of video games or social media. And so that's [AI] as a thought partner, brainstorming buddy. That's a way that AI could help.

Mark Royce ([11:24](#)):

And Chat GPT?

Karle Delo ([11:26](#)):

So with Chat GPT, you would want a really good prompt. So that's the thing. With large language models like Chat GPT, what you put into it is going to equal what you get out of it. So for example, I might give it a role. I might say, when I'm asking for a lesson hook or how to make it relevant, I might say something like, you're an expert in designing engaging lessons. And then from there, I would tell it what I want. So I

would say, you're going to come up with three lesson hook ideas for the following standard and try to connect it to any of these three topics. So farming or video games or something like that. And see what it comes up with. That's a really simplified explanation of how you could use Chat GPT to do that.

Karle Delo ([12:25](#)):

But then there's also all these tools out there for teachers that are AI tools, specifically for teachers. Like Magic school.ai is just one. EDU Aide is another popular one. And so with those tools, you actually just go to the website and it says it's for teachers, and there'll be a button that says, make it relevant. And I just click on that and I enter my info and it'll do the work for me. So in most cases, I don't necessarily need a really good prompt. The tool has already been prompted, if that makes sense.

Mark Royce ([13:01](#)):

Okay. Yeah. So I'm a teacher and I know I've heard about all this stuff, but I'm a little bit reticent to just jump in because I don't fully understand it. I mean, how do I use this thing? What do I do as a teacher to kind of get started and learn how to use it? Where do I go for resources to help me understand how to use it?

Karle Delo ([13:26](#)):

Okay. Good question. I would encourage teachers to try it out themselves and start by talking to it like you would another person. Just ask it some questions and kind of get the feel of how it can help. Also, as I said at the beginning, all models are wrong. Some models are useful. Be aware of the fact that it will not always produce accurate and true information. So just know that going into it. But also, some resources that you can check out. So I've learned a lot, and I've shared a lot on social media. So whatever social media platform you use, try to find someone who shares their thoughts on it. You know, it's all over. Facebook, Instagram, TikTok, even LinkedIn. I post things there and have learned a lot on LinkedIn about AI.

Karle Delo ([14:25](#)):

So I would say just look at what you already use. There's some great Facebook groups out there too. But then also I wanna mention a specific website. It's called AI for Education. So it's AI for education.io. And this website has so many guides for teachers. It has free webinars that they host, and also it has a prompt library that will give you prompts that you can then use in Chat GPT. So I feel like that's a really great place to start as well.

Mark Royce ([15:07](#)):

Okay. You're talking about using prompts and asking questions. I'm not even sure how I would open a tool on my computer to allow me to ask GPT a question or involve ai. So kind of go back to the beginning there for me. I'm that novice.

Karle Delo ([15:26](#)):

Yeah. So, so most AI tools are web-based. The web address for Chat GPT is chat.openai.com.

Mark Royce ([15:47](#)):

Okay. That's the, the home base for Chat GPT.

Karle Delo ([15:52](#)):

Yep. And just for the record, you can pay for it. I've always used the free version and it works just fine for me. So that's one. Another one I really like is Google Bard, so that's just [bard.google.com](https://bard.google.com). So that's Google's version of it. And that one's really simple and similar and fun to check out too.

Mark Royce ([16:16](#)):

Cool. Yeah. Would you mind sending me a list of your favorite tools?

Karle Delo ([16:26](#)):

I can absolutely do that.

Mark Royce ([16:27](#)):

And then we'll post it on the Science Modeling Talks website. Under your episode, we'll post that list for people to be able to access. Would that be cool?

Karle Delo ([16:39](#)):

Absolutely.

Mark Royce ([16:40](#)):

And also your personal resources that you are providing to others. Because I know you do. Do you do like consultancy on this stuff?

Karle Delo ([16:53](#)):

I provide professional development, so yeah, I could talk about that.

Mark Royce ([16:56](#)):

Okay. Well, tell us a little bit about it here.

Karle Delo ([17:00](#)):

I'm really passionate about how AI can be used and really interested in the topic. So I've been posting videos on social media, and I use the handle coach Karle, so it's just at coach, C-O-A-C-H. And then Karle, my name is spelled K-A-R-L-E, so at Coach Karle. And you can find videos there, but I also have a website where I post some freebies and resources, and actually I provide professional development for schools. If it's close to where I live in mid-Michigan, I can come out and see you. If not, I do virtual sessions as well. So I have a, a link tree that people can check out. So you just go to L-I-N-K-T-R EE slash coach Karle, and that'll be linked in the show notes as well. But from that, link tree you could get to all my social media platforms. You could get to my website where I have those freebies and different resources.

Mark Royce ([18:12](#)):

Is it like a page with a bunch of links on it for different resources that you provide?

Karle Delo ([18:18](#)):

Yes.

Mark Royce ([18:19](#)):

Cool. Cool. Link tree. Cool.

Karle Delo ([18:21](#)):

Yeah. And if anyone's interested in professional development, my email's right at the top of that.

Mark Royce ([18:27](#)):

So link ee

Karle Delo ([18:29](#)):

Link tr ee.

Mark Royce ([18:31](#)):

Oh, okay.

Karle Delo ([18:32](#)):

Yep.

Mark Royce ([18:33](#)):

Link tr.ee/coach Karle.

Karle Delo ([18:38](#)):

Yep.

Mark Royce ([18:39](#)):

Awesome. Okay. That's really neat. So I assume that your website has a link on your link tree, or do you want to give us your website URL?

Karle Delo ([18:52](#)):

Nope, I don't have a domain name yet.

Mark Royce ([18:54](#)):

Okay. But you can, but you can get to it through the link tree. Yep.

Karle Delo ([18:58](#)):

The link tree has everything.

Mark Royce ([19:00](#)):

Okay. So I assume it also has links to your virtual workshops?

Karle Delo ([19:06](#)):

If people wanna do a virtual workshop, they should email me.

Mark Royce ([19:09](#)):

Okay. Alright. Yep. And your email is there?

Karle Delo ([19:13](#)):

Yeah, so I provide professional development for my district. And we've done that in small chunks throughout the year, but also I've provided professional development, two-hour kind of sessions to a couple of schools in the surrounding area as well.

Mark Royce ([19:30](#)):

Okay. So, besides focused on AI stuff, what else are you doing these days? I'm curious, 'cause I know you've been in the classroom for several years. You've been a modeling instructor. I don't remember how long ago you got introduced to modeling, but you've been doing it for a while and you've been really active with AMTA, I know you were on their board or staff or something. I don't remember exactly. But you've done a lot with AMTA and I'm curious about what else you're doing these days besides all this focus on ai.

Karle Delo ([20:06](#)):

After teaching for 10 years, I moved into an instructional technology role at my district, and that was right when the pandemic hit. So there was a lot of need for technology help and instruction. So I worked with teachers throughout that process. And then this year is my first year adding the title of curriculum director to my role. So I do that in addition to instructional coaching. And so that has been really interesting and a new endeavor in itself. Other than that, I also have been --since March is when I really started the social media, creating the Coach Karle social media handle and posting videos on TikTok. I also cross post those to Facebook and Instagram. I've always loved making videos. I remember a teacher in middle school said, you can either make a video for your final project or write an essay.

Karle Delo ([21:11](#)):

And back then, I mean, I had one of the big camcorders and I had to play music. There was no editing. I just had to play music on my boombox, and I busted out my old Barbies, you know, and made this whole film. I've always loved making videos. It's been a passion of mine. And so it's really fun for me to be able to share technology tips that way with teachers all across the country. And I never thought I would be on TikTok. It seemed like a foreign platform to me. I felt like maybe I was too old for it, but I'll tell you what, there's a lot of really good educational content, and I've learned so much from that platform in general. Aside from ai, I just give technology tips to teachers, and educational technology. I have a master's degree in that. And so it's just great to share some of those things with teachers as well.

Mark Royce ([22:14](#)):

That's really cool. My brain just went back to the AI thing. So AI is not a magic bullet. What are some of the cautions that you would have about teachers jumping into the use of [AI]? You know, I know it's not a perfect thing, but it's useful tool. Talk to us about that. And if you have cautions or if you can address what you think might be misconceptions about AI. Talk to us about that.

Karle Delo ([22:51](#)):

Going into using ai, knowing that it's flawed, knowing that it's just predicting text. That's really all it's doing is it's trying to predict what the next word should be in this sequence based on all of the

information it has gathered from the internet. And the internet's not always the best place, let's be honest. There's some really negative stuff. And Chat GPT is using that information to formulate its response. It's all part of the model. And I think science teachers will appreciate this one. So, ai, it's called hallucinations. AI will hallucinate and make up information. And one thing I noticed is I was asking it to help come up with a claim, evidence, reasoning, conclusion prompt for students. And I wanted it to be about the reason why we have the seasons, and a big common misconception with the seasons is that people think that during the summer, the earth is closer to the sun and further away in the winter.

Karle Delo ([23:56](#)):

And that's not true. It's because of the tilt of the Earth's axis. But a lot of people on the internet have the misconception that the earth is closer to the sun in the summer. And so when I was asking Chat GPT to help me with that, it also had that misconception. So, just know that you are the expert of your subject area, of your classroom, you know your students. So always understand and know that you're gonna have to apply that human filter, before you just take what it gives you. And also, when you approach it as a brainstorming buddy or a thought partner, you're going to get a lot more out of it, I think, than if you expect it to just maybe create. Like, it can't create a whole lesson plan and a slide deck and like activities ready to print.

Karle Delo ([24:54](#)):

It's not gonna do that. There are different AI tools that can do some of those things, but when you approach it knowing that it's just gonna kind of be this other tool, it's not gonna be a magic bullet. I think that that helps. And then also it's important to think about how it's being used. I think modeling instruction is just good teaching, right? But you can use AI to make really low level activities and tasks and busy work and low level quizzes for students very easily. I could have chat GPT make a 50-question, multiple choice quiz on a on a topic in a minute or two. But would that really be useful for my students? Or would that actually be harming them or making what we're doing less engaging.

Karle Delo ([25:58](#)):

And so knowing that, you know, we shouldn't be using it to just do what we've always done, I think it's important to use AI to really push you outside of your normal thought patterns and of your normal ideas, and use it to think of... What's an authentic assessment I could do for this unit instead of just doing a regular test? That's a way that you could use AI to brainstorm that. I really like, this is a quote from Matt Miller. He has a great website and podcast called Ditch That Textbook. And the quote is, "AI is not thinking, for me, AI is making me a better thinker." But it depends on how you use it. If you wanna use it to think for you, that's not gonna be a great product. If you're using it to make you a better thinker. And as that thought partner brainstorming buddy, it's going to have a much bigger positive impact on what you do.

Mark Royce ([27:08](#)):

Well, in light of all those cautions and precautions that you're recommending, why should a teacher go for it? Why should a teacher embrace the idea of using these tools?

Karle Delo ([27:23](#)):

I do think that eventually, because students will need to use ai, in whatever their future job is most likely. Most employers are not gonna say, don't you dare be more efficient by using AI. You know, most employers are going to want employees that can be more efficient. So, let's picture a world where



teachers ignore AI and just say, you know what, that freaks me out. I don't want anything to do with it. It's gonna keep advancing. Education is not gonna be the main driver of artificial intelligence. It's gonna be companies, it's gonna be, government. It's gonna be those big things pushing it forward. And so it's gonna move forward whether we check it out or not, whether we look into it and explore it or not. And I think that if teachers do at least explore it, then eventually when the time comes to actually think about, how could students use this, how could students use this to create a better end product or as a thought partner, or to help revise their work.

Karle Delo ([28:38](#)):

When we get to that point, if teachers do explore ai, they're gonna be more prepared for those conversations with kids. Because that's the other thing is students are already, right now, students are using AI whether we like it or not, whether we know it or not. And if you suspect that maybe a student used AI to cheat or totally generate an assignment or response, which happens, if you know nothing about AI, how are you gonna have that conversation with the kid? Right? If you do know, if you do understand how the tool works, you can approach that conversation in a very different way, in a much more informed way. And just a couple other things that AI's really helpful for. It can help with differentiation. If you have a text that's at a high school reading level maybe for sophomores, but you have some students who are still reading at a lower level, which is happening in a lot of classrooms across the country right now, you could use AI to help level that text and put it at a sixth grade level, a seventh grade level. So you can use it in ways that are really beneficial for not just you, but for your students as well.

Mark Royce ([30:04](#)):

Very interesting.

Karle Delo ([30:07](#)):

I'll just say one more thing. You can also use it to help write your sub plans in about a quarter of the time. That's probably one of the things that teachers don't like spending time. I never liked writing sub plans. This can really help you out.

Mark Royce ([30:23](#)):

Wow. That's a great insight. I can't believe how quickly our time is going and we are slipping away our time limit, but I wanted to ask you, I know that in February 2024, you're involved in a connect Ed event.

Karle Delo ([30:45](#)):

Yep. AMTA Connect ed. Ye

Mark Royce ([30:47](#)):

What are you gonna be addressing? Like a workshop or what are you doing there?

Karle Delo ([30:57](#)):

So ConnectED is a conference style event where usually there's a keynote and then some breakout sessions after that. So I'm very excited and honored that AMTA has asked me to be the keynote speaker this year. So what I'm gonna talk about is artificial intelligence and ai, but I'm gonna show specific examples for people who do wanna get started. I'm gonna show specific examples of not only how you

can use it as a teacher, but how it can be used with modeling instruction or inquiry-style teaching. Hmm. How can it help me with those NGSS standards that are so broad? And so, I'm excited for that. And then there will also be some breakout sessions and I just encourage people to check out modeling instruction.org, check out the website, check out their social media channels, to get more information about that event. And to make sure that you register before the, you know, before it reaches its capacity. So, just be on the lookout for more info on that.

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

Where is it being held? Do you know?

Karle Delo ([32:01](#)):

It'll be a virtual event.

Mark Royce ([32:03](#)):

A virtual event. Awesome. And, uh, when,

Karle Delo ([32:07](#)):

It will be in February, and let me check the date real quick. That is going to be February 11th.

Mark Royce ([32:16](#)):

Awesome.

Karle Delo ([32:17](#)):

Of 2024.

Mark Royce ([32:18](#)):

Yeah. That's great. Well, this podcast is going out in January 1st, 2024. So people will have time to get to the event as well, but I know that people will listen to this afterwards too, but having the resources that you've shared with us and that we will post on the Science Modeling Talks website, the resources will be there.

Karle Delo ([32:46](#)):

Great.

Mark Royce ([32:47](#)):

Well, Karle, it's been awesome talking to you. And I have learned so much just in this half hour that we've spent together. It's been great. And I hope our listeners also are feeling the same thing and are encouraged to really check all this stuff out about AI, Chat GPT, to look at the resources that you've shared with us and start their own journey with AI in the classroom. This is really great. I wanna thank you so much for sharing your expertise with us. It's been wonderful.

Karle Delo ([33:20](#)):

Thank you for having me. Thanks for having me. And also, I'm excited to connect with other modelers through those social media channels. So find me at Coach Karle and I'm looking forward to connecting.

Mark Royce ([33:34](#)):

Awesome. And don't forget to check out the AMTA website, American Modeling Teachers Association. Cool. Well, I look forward to seeing you again sometime.

Karle Delo ([33:43](#)):

Thanks.

Mark Royce ([33:44](#)):

And, uh, I wanna just thank you again for being here. It's been great.

Karle Delo ([33:48](#)):

You. Bye Bye.