



Kat Deaner: [00:00:00] Our students when they leave K12 hold? And it's these problem skills, those skills to be able to take concepts and put them together in multiple different ways. So, it's really, how do we think? How do we learn? How do we learn to learn?

Annalies Corbin: [00:00:19] Welcome to Learning Unboxed, a conversation about teaching, learning, and the future of work. This is Annalies Corbin, chief goddess of the PAST Foundation and your host.

Annalies Corbin: [00:00:29] We hear frequently that the global education system is broken. In fact, we spend billions of dollars trying to fix something that's actually not broken at all but rather irrelevant. It's obsolete. A hundred years ago, it functioned fine. So, let's talk about how we reimagine, rethink, and redesign our educational system.

Annalies Corbin: [00:00:54] So, welcome to Learning Unboxed. We're very excited today to talk about energy, and workforce development, and what's going on in the world of energy education. So, I'm thrilled today to be able to have with us Ryan Prestel, who is the founder and CEO of JadeTrack, a Columbus, Ohio-based energy monitoring entity. Ryan is going to explain it in great detail. So, I'm not going to run down that road with all of our listeners.

Annalies Corbin: [00:01:25] But just a little bit of background as it relates to how and why we know Ryan at the PAST Foundation and the Past Innovation Lab, and we're so excited about the work that we're all doing together. Ryan is a self-professed lifelong entrepreneur with an affinity for using technology to solve complex business problems. And there's a lot of work that he's done over the years in sustainability that, ultimately, landed him to co-founding JadeTrack. And we'll talk about that in a moment. So, Ryan we're excited to have you here.

Ryan Prestel: [00:01:54] Thank you for having me.

Annalies Corbin: [00:01:55] Excellent. And joining us on the flip side of this really amazing project called Energy4Learning is Kat Deaner. Kat Deaner is PAST Foundation's very own Director of School Design and Online Learning, who has been

with us for a number of years. She leads all the efforts associated with school transformation projects, as it relates to teacher professional development, thinking about classrooms differently, and really, really thinking about where the opportunity is in next generation of teaching, learning, and the future of work. So, Kat, very excited to have you with us as well.

Kat Deaner: [00:02:30] Thank you for having me.

Annalies Corbin: [00:02:31] So, as we get started, as I alluded to, the project that we're going to talk about today is something called Energy4Learning. And I want to start our conversation with you, Kat. If you could give us the 70,000-foot view of what Energy4Learning is. And we'll get into the details as we go along, but I want to set the context for our listeners real quick. All of the projects and the programs that we are bringing to Learning Unboxed are intended to be case studies. So, great things that have worked, lessons that we've learned along the way, and opportunities for other communities to do similar things as they think about education. So, Kat, what is Energy4Learning.

Kat Deaner: [00:03:09] The Energy4Learning is a really exciting new project that we've started in partnership with JadeTrack. And what it does is it takes buildings, school buildings, and it uses the school buildings as a learning tool, so that as students are engaged in problem-based learning, they can actually use their buildings as real data comes in from the JadeTrack monitoring system to solve problems around energy conservation in their classroom. So, they're taking -- the idea here is that teachers and students alike are taking the information from JadeTrack and integrating it into the learning experience directly into the classroom.

Annalies Corbin: [00:03:55] Awesome, very exciting, and definitely needed in terms of preparing future workers.

Kat Deaner: [00:04:02] Yes, absolutely. Absolutely.

Annalies Corbin: [00:04:04] So, Ryan, give our listeners a sense of what exactly is JadeTrack. And I want to step back just a moment. And, also, as you're explaining what JadeTrack is and what it does, why you started that because I think that plays in beautifully to some of the premises behind the project.

Ryan Prestel: [00:04:23] Yes. So, we're big believers in starting with why. So, maybe I'll go with that, and maybe give you the background of how we got here today. So, if you rewind back to 2010-2011, I was in supply chain for ScottsMiracle-Gro. Scotts is the leader in lawn and garden. So, they have an inherent interest in the environment. And back in 2010, they were struggling with this sustainability problem. What is it? What does it mean? What does it mean to our organization? How do you measure it?

Ryan Prestel: [00:04:49] And so, at the time, and even still today, there wasn't any great technology or software available to help them quantify waste water, energy, and emissions. And so, our technology was developed inside of Scotts to help them quantify their carbon footprint, how much they're using as it relates to energy and water. And they were able to publish their very first sustainability report in 2012.

Ryan Prestel: [00:05:09] So, what was really interesting in all of that is, again, we saw an opportunity where, you know, technology needs were not being met, and I had the opportunity to build some software inside of the organization. And they were fortunate -- we were fortunate enough to retain the intellectual property.

Annalies Corbin: [00:05:24] Wow.

Ryan Prestel: [00:05:25] So, after I had left the company, and it was 2011, we worked nights and weekends to commercialize what was an initially very Scotts-centric product and try to take it to market recognizing that there's a lot of other organizations out there that are trying to quantify the impact from their sustainability programs.

Ryan Prestel: [00:05:43] So, impact means, you know, financial, social, and environmental. And so, you know, whether you're an organization looking to publish a sustainability report that says, how much waste, how much carbon, how much energy

you use, or you're an organization that, you know, like all in Sandy Schools that initially deployed the technology to try and save money, you know, the solution is really intended to help check those boxes financially, socially, and environmentally.

Ryan Prestel: [00:06:07] So, you know, when you look at kind of what we do and why we do it, you know, our vision and our mission is to help empower customers to create those lasting impacts. So, reduce costs to operate your facilities, get people involved in a program and a process around energy conservation and sustainability. And then, obviously, the environmental impacts are, you know, more and more important as every day goes by. And so, some organizations lead with that environmental piece. Others look at it as a nice to have and an additional benefit. But at the end of the day, you can capture financially, socially, and environmentally benefit from using our technology.

Ryan Prestel: [00:06:40] So, what it is, a piece of software helps you gather all this data. It helps you quantify, you know, things like energy usage in a building, water consumption, et cetera. And then, be able to put that information into place, so that organizations can capture some of those outcomes.

Annalies Corbin: [00:06:55] Absolutely. And Kat, that's the beauty of what JadeTrack has to offer is it's real, right.

Kat Deaner: [00:07:02] Yeah.

Annalies Corbin: [00:07:02] And so, couch the opportunity that is having a school building being fully energy monitored through a JadeTrack system, and how does that then translate into the work that you do and why. So, you know, a school gets this amazing technology, but so what if we're not using it as an actual teaching tool? So, that's where you come in. So, what does that look like?

Kat Deaner: [00:07:28] Absolutely. So, our work that we do with teachers and administrators is looking at how do we involve and engage our students in relevant learning opportunities around solving real-world problems. That's where problem-based learning comes in. So, oftentimes, what we do is we look around our community and

say, "Okay, what are some issues or problems that we can solve?" And we put our skills to use, our design thinking skills to use to solve these real-world problems.

Kat Deaner: [00:08:02] What the beauty of JadeTrack is, is that JadeTrack is providing data that is real world and real in the building - how much real can you get with that - to solve a problem around energy conservation and sustainability. So, what a wonderful opportunity for teachers and students to use the building in a way that they can solve the very problem that JadeTrack track is looking to help customers solve.

Kat Deaner: [00:08:29] So, we're actually including students in the process of, how do we reduce our carbon footprint? How, as a building, and how, as a community within the school, can we change our habits, perhaps, in a way that we can reduce our energy? Well, in order to be able to think about what are some behavior or habit modifications, we need to be able to look at the data and where are we now, and how do we change our behavior. And then, did it do something, right?

Kat Deaner: [00:08:59] So, the JadeTrack data is allowing students in the classroom to solve real world problems within their individual buildings and classrooms. And the hope is is that they take

those skills and they propagate them out into the world. So, we're starting close to home within the classroom, the classroom being the home and the school. And then, we can start to utilize these skills into other applications.

Annalies Corbin: [00:09:25] And so, that's a fabulous segue way to think about, ultimately, what happens here. And it really gets to the foundational piece of the why for all the time, the expense, and the effort. And so, Ryan, the bottom line why here is that we have a serious workforce gap when it relates to the energy sectors broadly, right, and sustainability on a global scale, environmental, social, you take your pick.

Annalies Corbin: [00:09:55] But the reality is we have a workforce crisis, not just in this country, but other parts of the world as well. And so, ultimately, the work of getting and using, you know, and education, the backside of that is it's going to translate into folks who want to go into that as a career. So, you know, on that side of the equation, where do you really -- where do you see the greatest need from the workforce piece?

Ryan Prestel: [00:10:20] Yeah. I think going back to my days in schooling, I got the most out of the experiences where we were actually hands-on doing things. And so, I think back to my Social Studies teacher who, at Dublin schools, ran a business simulation for the entire duration of the year that was focused around the curriculum that we needed to learn, and that was one of those things where it was like, "Wow, I really got into this." It, kind of, set the tone for being an entrepreneur and all of that sort of thing.

Ryan Prestel: [00:10:46] So, I think, you know, we recognized, and I recognized that there's not enough of those experiential learning opportunities. And I think that there's so many kids that go to school, and they sit in the classroom with a teacher that says, "Open up page 35. I want you to read the first paragraph." We go around the room and do that. It's not a great way to learn. And so, I think that there's ways that we can start applying real-world-

Annalies Corbin: [00:11:06] It's a terrible way to learn, by the way. **Ryan Prestel:** [00:11:08] It's a terrible way to learn. And-

Annalies Corbin: [00:11:08] We're just going to put that out there. **Ryan Prestel:** [00:11:09] It's a terrible way to learn. And in- **Annalies Corbin:** [00:11:11] We're going to vote no.

Ryan Prestel: [00:11:12] Vote no, yes. So, we saw this as an opportunity to not only, you know, educate students about the importance of conservation, about the importance of, you know, things that they inherently care about. I mean, they're intrinsically motivated by the environmental things, you know, versus some of the older folks that may not be as motivated by those. What great is that you check all those boxes, so you can connect to people at all levels. And I think that, again, doing things in

a real-world experience kind of enables them to understand the ins and outs of it, and whether that'd be something they want to pursue as a career.

Ryan Prestel: [00:11:42] So, you know, what we look at and deal with every day is the data. And, you know, there's articles out there that talk about just how important and valuable that data is. And so, thinking about careers that don't even exist today, data analysis around energy, sustainability, they're there, but they're not very well-developed. So, I think that we're going to continue to see more and more in that sphere, and these types of programs are going to help enable kids to understand the benefits of, you know, starting a career in that type of space.

Annalies Corbin: [00:12:10] And they're also going to help students really, sort of, see the connections across industries as well. And that's one of the things that I really truly love. For our listeners who haven't been to the Past Innovation Lab or are taking a look at it online, we have an energy learning lab there, and the premise of the program, and it's evolving.

Annalies Corbin: [00:12:28] And, you know, one of the things that I love about it is that the students who participate in a pathway that lends around energy are going to learn as much about technology, you know, skills, computer, coding as the students who are in the Design Lab, which is all about manufacturing and engineering. And, you know, that translates back into bodies, which is healthcare. But, you know, there's still coding, there's still cybersecurity. But there are so many Kevlar threads, if you will, as it relates to potential careers that run through a variety of career options, right. And those lends that.

Annalies Corbin: [00:13:02] And that's a really, really critical thing because we tend to box people into a single space; yet, the work that somebody who comes to work at JadeTrack could be doing it in lots of different places and lots of different industries, you know. Your point, you started this inside of Scott's, right, which is a very different company than traditional energy provider.

Annalies Corbin: [00:13:23] So, that helps with some of the context pieces. And I think that the other thing we want to make sure that we don't lose sight of is there are other partners here. So, there's actually an energy company in the more traditional sense of people will think about energy that are actually standing behind these, you know, ideas. Energy has come to the table, not just to provide funding, but also to push the lever of the workforce development piece. And then, added to that is a school partner, a variety of school partners as we move through.

Annalies Corbin: [00:13:52] So, Kat, a little bit about where that intersection is because you've had to tailor this program as a pilot, and you're training for schools and teachers with those other two user needs in mind. So, what does that look like?

Kat Deaner: [00:14:03] Absolutely. There is a lot of power when we bring multiple partners to the table. And what we do at PAST is, really, how do we bridge those and make those connections? And so, if we have multiple partners at the table, we start to identify what assets do each of the partners bring to the table, and how can we then play off of those and use those to build a really good program, ultimately, so that students have these learning opportunities that they're able to take these skills out into the workforce?

Kat Deaner: [00:14:33] So, if we start to think about all of the partners at the table, we've been able to leverage expertise from IGS. We've been able to leverage the expertise at JadeTrack bringing in their expertise in energy monitoring and just energy conservation. IGS has been a wonderful partner, to your point, Annalies, in not just funding but lending their expertise in what does this look like when we think about, "What are real-world problems that IGS is solving? What's in the future? And how can we bring that into the classroom as a relevant learning opportunity?"

Kat Deaner: [00:15:11] So, as we've been piloting this in the schools with educators, we're able to ask educators, "What does it look like in the classroom? How can you use this data that could drive learning and deeper learning?" So, really working with all of the different multiple partners at the table to figure out, how can we come together and figure out the best system to move this forward to provide opportunities for students?

And it looks very different from the kindergarten classroom to the 12th grade classroom or post-secondary.

Kat Deaner: [00:15:45] And so, looking at that, making sure that we're able to get feedback and work collaboratively with educators around, what do learning modules look like in the classroom when we start to utilize real-world monitoring and real-time energy monitoring.

Annalies Corbin: [00:16:03] And so, just to be clear because I think that one of the things that you just said might throw some folks, right. So, you are implying, right, that this project, and this program, and the work that you, and Ryan, and IGS, our school partners, are doing together is broad and can actually be applied K12. It's not just a high school thing. Only high school kids can study energy?

Ryan Prestel: [00:16:27] No way. **Kat Deaner:** [00:16:27] No.

Annalies Corbin: [00:16:27] No way? **Kat Deaner:** [00:16:27] No.

Ryan Prestel: [00:16:27] No way.

Annalies Corbin: [00:16:27] No way. So, literally, you're taking a set of content experts, the folks who are coming in, for example, from IGS, you're sitting down with them, you're asking them what are the wicked problems they're working on, and then you are translating that as a team into tangible things that a kindergarten, a third grade, a fifth grade, a tenth grade classroom teacher school can actually utilize as the launching point to do what? Either of you jump in.

Ryan Prestel: [00:16:56] Yes. I mean, I'm happy to take that. So, you know, one of the things that we saw early on was that, you know, even at, call it the elementary school

level, you know, the material may be a little bit different, but the interest and the excitement around the topics are very much the same.

Annalies Corbin: [00:17:09] Exactly.

Ryan Prestel: [00:17:09] And so, we would do these, you know, Energy 101 classes where we go into an elementary school, and sit with, you know, first, second, third graders and talk about, "Well, you know, what's LED lighting? What's this and that?" You know, basically talk through all the details about what is energy.

Ryan Prestel: [00:17:22] And it was great as we did one of these early on, I got a phone call from a former colleague that her third daughter was in that class, and immediately came home, and started asking parents about, "Well, do we have LED lighting?"

Annalies Corbin: [00:17:32] That's perfect.

Ryan Prestel: [00:17:33] "Do we do these things at home?" **Kat Deaner:** [00:17:34] Brilliant.

Annalies Corbin: [00:17:35] Yeah.

Ryan Prestel: [00:17:35] "You know, what does our energy bill look like?" And so, you know, the curiosity was very much there even at the third level. When you go up to the high school level, they have an opportunity to actually make change and to influence their peers.

Ryan Prestel: [00:17:45] And so, one of the, kind of, very telling stories that came out of this early on was, also, when the high school level in that we encouraged the students to go out and find a problem across the high school, across the community. And one of the problems that they identified at the high school level was that the females would use the restroom, and when they'd go into the restroom, they would turn

on all the hand dryers in that restroom as a way to create white noise for themselves in the restroom.

Ryan Prestel: [00:18:11] And one of the things that came interesting out of that is, you know, they were like, "This, probably, isn't very sustainable." So, one of the students went into the restrooms, counted how many hand dryers they had across the high school, quantified how many watts they used, and was able to educate their peers on, "Every time you push that button, you emit this much carbon into the atmosphere." So, the thing that was different was that, you know, they weren't necessarily talking about the energy, but the byproduct of the energy.

Annalies Corbin: [00:18:34] Right, right, and behavior. **Ryan Prestel:** [00:18:35] And the behavior thing, behavior.

Annalies Corbin: [00:18:36] We're talking about behavior because as I recall from the first time I heard you tell that story, the girls would go into the bathroom and turn them all on. And when they would leave, because there were other people in there, if they had shut off, they'd turn them all back on. So, there was a culture of the school that says we must have white noise, so we can't hear each other doing our thing, right, and that, somehow, that was a good thing to do.

Ryan Prestel: [00:18:59] Yeah. And you can send engineers through buildings all day long and, kind of, thinking about traditional energy management in schools, in particular. It's engineers, and facilities managers, and administrators who are part of the program. Well, if you're not evaluating what the behavior in those buildings are-

Annalies Corbin: [00:19:12] Exactly, exactly.

Ryan Prestel: [00:19:12] ... the variables in those buildings, so to speak, you're never going to see things like that and identify things like that. So, you know, our whole belief is that if you engage the people that are in those buildings with things that they're

interested in, they're going to do the rest, they're going to take their initiative, and they're going to find ways to solve those problems.

Ryan Prestel: [00:19:29] But when we put data and information into a black hole, which is how we've done energy management for years, we often omit the opportunity that comes with it, the people that are actually using those facilities. So, data for the sake of data we know is worthless. Data in a black hole is worthless. And so, we're a big believer in how we can bring that out into the open and get people excited about a common cause.

Annalies Corbin: [00:19:50] And that is the thing that I, from the get go, I loved, loved, loved about the potential of this project. And I would like to close that little vignette, if you will, with the outcome was not only did they stop that behavior in the school, but one of the mechanisms was that they created their own school-wide PSA, right, which we got to see, which is a lot of fun. These girls explaining to other girls why this is really unnecessary behavior that's wasteful and damaging to the earth.

Kat Deaner: [00:20:17] And so, the scope and scale of that scenario, Kat, in terms of the learning that was possible, and I think that's a perfect example of the way that you integrate into the thing that you're teaching in the teacher professional development component of all of this, is that was more than just Earth Science at play, and that was more than just energy data. At the end of the day, by the time they completed that social effort and energy effort at the school, they had hit on so many different standards and opportunity. So, talk about that as that integrated chance, like you said, that opportunity, Ryan.

Kat Deaner: [00:20:52] Absolutely. That's a wonderful example. How do you solve a real-world problem using multiple content lenses, right?

Annalies Corbin: [00:21:03] Exactly.

Kat Deaner: [00:21:03] So, as the girls were solving for that problem, they weren't just doing math, and they weren't coming over here, and then just doing Earth science. They

had to integrate all of their knowledge into solving this problem using English language Art. So, how do I communicate what I find? How do I take the data that is in front of me, and how do I interpret it in a way that a user, an end user, might be able to understand? So, again, that goes back to the English Language Arts. How do I do it in a way that is going to be - how do we say - consumed in a way that is entertaining or in a way that the end user would actually understand?

Kat Deaner: [00:21:49] And so, these young girls started to put together a video. That's a great use of media. So, here, we have been able to take all of these concepts, and put them together to solve a problem, and then to be able to communicate it out. That's exactly what applied learning and problem-based learning achieves. So, you take a real-world problem, and you put in all of your experience, all of your content lenses together in a very transdisciplinary way, and you're able to solve the problem.

Kat Deaner: [00:22:22] So, if we talk about going back to our workforce development piece, these are exactly the skills that we hear over and over again from industry. What skills that they want to have our students when they leave K12 hold? And it's problem-solving skills, those skills to be able to take concepts, and put them together in multiple different ways. So, it's really how do we think? How do we learn? How do we learn to learn? And this example that we're using is a wonderful example of just that. How do we take all of these ideas, put them together in a coherent way, and solve a problem?

Annalies Corbin: [00:23:02] Right. And so, what are some of the wicked problems? So, for example, when -- because you did -- you very deliberately had folks from JadeTrack and folks from IGS, actual practitioners across the breadth of what these two companies together represent, participate in your actual teacher professional development in workshops and envisioning sessions. And so, what did you hear, Kat? I mean, what are what are folks working on that the teachers grabbed onto, and then started building modules for their school and their classroom? So, just toss out a couple of topics that you think resonated the most.

Kat Deaner: [00:23:43] Certainly. One of the biggest ones that resonated the most was, how do we lower our carbon footprint? And Ryan alluded to that earlier that the skills that students are learning in the classroom, they can then come back home and educate their family. So, one of the units that was very successful was, how do we lower carbon footprint? And the students were able to come up with a PSA or a really informational sheet of, "These are behavior practices that we can modify, not only at school, but at home." So, that was one unit that was really successful.

Kat Deaner: [00:24:19] And part of that too was not only just behavior but what are those low-cost infrastructure changes that they could do. So, do we change our light bulbs at home? Can we do that, mom and dad, right? That's a great one.

Kat Deaner: [00:24:32] Another unit that they looked at was the efficiency of solar panels. So, part of the JadeTrack monitoring system is to be able to pull out what kind of energy are we able to absorb from the sun and convert it into energy, I guess. So, solar radiation and convert it into energy.

Kat Deaner: [00:24:51] So, there was a whole unit around, does the cleanliness of our solar panels matter? And so, they went down a whole -- did a whole unit around that, the cleanliness of our solar panels, and they were able to actually design different mechanisms to be able to clean the solar panels, and they were able to use the data to see if it made a difference or not.

Annalies Corbin: [00:25:12] And does it, Ryan? Does it make a difference?

Ryan Prestel: [00:25:14] I think it does.

Kat Deaner: [00:25:16] Yes.

Ryan Prestel: [00:25:16] Yeah, a dirty solar panel, it's definitely not going to generate as much energy.

Annalies Corbin: [00:25:18] No, yes.

Kat Deaner: [00:25:18] Slightly. It made a slightly different impact, but we know that one wicked problem typically creates multiple, other problems to actually solve for. So, from that, they were able to say, "Okay. Well, it just did slightly, but how could we better capture the solar radiation coming out?" So, they were -- then, it spun off into, what are the angles of the solar panels that we have right now? Do we need to modify those?

Kat Deaner: [00:25:46] So, those are just two examples that we were just able to help educators create, and then implement this last year. And the students were so engaged because it was right there in front of them. It was not this data that's out there, that's tangent or, I guess, abstract. It's right there in front of them. As they're building their solar panels, they could go and look at it.

Annalies Corbin: [00:26:10] Right, right. So, it was real, and it was relevant. **Ryan Prestel:** [00:26:13] Yeah.

Annalies Corbin: [00:26:13] So, how does that then translate? Let's talk about Energy4Learning, in particular, now. And so, Ryan, walk us through a little bit. So, JadeTrack had, you know, a standard monitoring package. As you said, the software. And so, you know, the project here is, how do we then take what it is that you're already doing? And how do you take the opportunity and the excitement of wanting to incorporate, you know, energy and energy lessons in education, specifically, into the day-to-day use inside of the schools into a mechanism that's going to have broad accessibility and appeal? So, let's talk about Energy4Learning in terms of what incorporates in the portal, in particular, and why. So, why don't you lead on that a minute with us?

Ryan Prestel: [00:26:58] Yes. So, looking at, you know, energy and how you conserve it, you know, the measurement piece is so important, right. And so, everybody is looking for ways to operate facilities more efficiently, whether it's to reduce costs or to improve their environmental footprint. And so, the measurement piece is fundamental to it all.

Ryan Prestel: [00:27:13] And I think that, you know, one of the comments that Kat made a minute ago about is the applicability to so many different spheres. I think, you know, when you look at some of this information, we can translate energy into carbon. We can translate energy into dollars. We can do so many different things that you're just basically, you know, converting that, you know, basis information into something that's meaningful for certain individuals. So-

Annalies Corbin: [00:27:35] Including Big Macs and chicken nuggets, if I recall, right? Yeah.

Ryan Prestel: [00:27:38] Yeah. I was just going to get to that. Right. So, you know, kilowatt hours-

Annalies Corbin: [00:27:40] I just stole your thunder, sorry.

Ryan Prestel: [00:27:41] Right, yeah. So, you know, being able to make it meaningful regardless of where you're at and in your knowledge of, you know, the subject. So, we can take, you know, energy, and we can turn it into calories, and we can say that's the equivalent of X number of McDonald's chicken nuggets.

Annalies Corbin: [00:27:56] Right.

Ryan Prestel: [00:27:56] Very relevant for students, right? **Annalies Corbin:** [00:28:00] Yeah.

Ryan Prestel: [00:28:00] So, you know, we saw that there was an opportunity to do a whole lot more with this information. So, you go back to our first school customer, the administrators that we were in there initially talking to had no clue what we were talking about, you know, five, six, seven years ago. But the minute that you saw one of the science teachers light up with the information that we could provide, and what they could do with it in the classroom, it was very exciting because, again, they're translating that stuff into things that's meaningful for them.

Ryan Prestel: [00:28:25] But at the end of the day, it all goes back to dollars and cents that impacts the district, makes the administrators happy, makes taxpayers happy, everybody wins. But we need to find ways to motivate people. And I think that we found that this was a way to motivate people intrinsically by things that they already care about.

Ryan Prestel: [00:28:41] So, if you translate this information and make it fun, make it relevant, make it meaningful for students, think about how many students go into a school building every day. Some of our larger districts here, that's thousands, tens of thousands. Those were a lot of variables. So, you needed to, you know, connect with those folks and just talking about kilowatt hours, and dollars, and cents wasn't going to do that. So, we needed to find a way to wrap some interesting things around it get them to use their problem-solving skills to drive some of these actions.

Ryan Prestel: [00:29:07] So, you know, the portal itself was pretty easy for us to be able to take from a very operational tool to an operational plus educational tool. And that's one of the big ways that we're different from a lot of the other energy solutions out there is that engagement piece and what we do is so critical.

Ryan Prestel: [00:29:23] So, whether we're engaging students, administrators, the tax payers, you know, you can translate that information in a variety of ways. You can, you know, reach them with the information that's meaningful to them. So, the right information to the right person at the right time is one of the things that we're able to do with this and making meaningful for a variety of audiences.

Annalies Corbin: [00:29:41] Right. And just for transparency for our listeners. the Energy4Learning portal is a partnership project between the PAST Foundation Innovation Lab, JadeTrack, and IGS Energy. And it's out, and it's available. And then, the resources online, when this podcast airs, you'll be able to go and find the URL, and go take a look at it. And so, this isn't a sales pitch, but the program, and the monitoring, and the opportunity to engage that, all that is available just by reaching out. And those resources will be provided for you as well for folks that are interested.

Annalies Corbin: [00:30:15] So, Kat, tell us, walk us through a little bit of the features because to make this truly user-friendly, to come back to language, in a school setting, specifically, both for teachers and ultimately for students, there were key components that you needed built into this, so it

would be effective for teachers. And so, talk a little bit about between the two of you, so when I go there, what do I see and what can I do?

Kat Deaner: [00:30:42] Absolutely. So, when you go to the portal itself, you will be able, or you can log in and see your building, and all of the energy usage over time. So, there are a number of different options that you're able to go in and say, "Okay, what was my energy usage yesterday? What is it today? What was it a month ago?" So, you're able to look at usage over time.

Kat Deaner: [00:31:06] The other feature within Energy4Learning is that it's a network of shared -- with shared educators across the country. So, you can share different units. So, we've just brought to the table a few different examples. Well, this portal provides a number of other examples that you, as an educator, can go in and say, "Oh, that's a great idea." You can start to look at other learning ideas or learning units that you can implement in your classroom.

Kat Deaner: [00:31:37] So, the portal does a number of things. It actually provides the data that your school is there. You're able to also look at other schools to compare if that's what part of your desired learning is to look at other schools. You're able to get ideas from this portal of how did other educators use this in the classroom within my grade band. So, how does it look in the kindergarten, fifth, eighth, or up into the high school level? What does that look like?

Kat Deaner: [00:32:09] And part of the portal, also, starts to look at what are building materials. That was really an important feature. If we start to look at infrastructure, it's going to make a difference what your building is made out of versus somebody else's building, as well as temperature. So, weather is also included in there. So, what does it look like outside? The climate in Ohio is going to affect your energy use different than if

you were somewhere in a warmer climate like Florida, right. Those are going to be very different.

Kat Deaner: [00:32:41] So, it tries to pull -- it does pull together different pieces of data that students can start to manipulate to look at, "Okay. Well, if we want to look at modifications over time, we can start to look at our energy usage over time."

Annalies Corbin: [00:32:58] And so, as teachers start to use this, and we know, for example, that some folks naturally, to Ryan's point earlier, fully understand all the terminology. Get a great science teacher, they're really comfortable. But part of our goal is to not limit energy education as an opportunity for teaching and learning solely to the sciences or solely to math, the natural places. And we see this in the STEM field and STEM disciplines all the time. Oftentimes, very, very difficult for folks to sort of step back and step out a little bit, right, and recognize that there is a fascinating and quite frankly beautiful opportunity for a lot of that to be fully integrated across.

Annalies Corbin: [00:33:41] And so, we wanted this tool and this program to be as accessible to the social studies teacher as it was to the science teacher. So, how do you really, guys, accomplish that? I mean, how do we totally get the social studies teacher jazzed about energy and to use that as their case study somehow to teach aspects of social study or those content standards as opposed to that musty, old textbook - and, yes, I did use that term musty, old textbook - sitting on the shelf? Why energy instead of traditional American history? I'm going to get myself in trouble for that, aren't I? All right makes for good conversation.

Ryan Prestel: [00:34:21] Yes. I think, context is so important in all of this, right. So, if you can provide context to the information, you can get people, you know, excited about the various, you know, ways that you can apply that information. So, science teachers, math teachers, you know, social science teachers, you know, there's going to be different aspects of this that are going to be more meaningful

for some than for others. But at the end of the day, you know, tying that back into things that are, you know, needing to be taught in the classroom, and doing it with that relevant, real, and experiential opportunities.

Ryan Prestel: [00:34:49] And so, I think that the open source nature of what we're doing here and the collaborative nature of you're part of this program, you're going to be able to gather the various different curriculums and share it with your peers across the country really creates an environment that is collaborative. And when we can get, you know, people that are going to post materials that, you know, may span many different disciplines that could be, you know, a way for them to apply things in a variety of different classrooms.

Ryan Prestel: [00:35:15] So, I think it's, again, all about context. And as we talked about, you know, things like weather, the energy costs, you know, the impacts of other things that are going on are going to be useful for various subject matters and makes that stuff contextual and meaningful.

Annalies Corbin: [00:35:30] So, what happens what happens next? I mean, so as you think about scale, so we're just completing what was a two-year, 18-month, really, design and development pilot. And there's more to happen with that. But, ultimately, for this to truly, truly be meaningful and impactful, it has to be scalable, but it also has to be locally accessible. And that's an intriguing balance that we often see in efforts that happen in innovative education, right. How do you take great program opportunities? How do you make them broadly accessible, but how do you keep them locally or regionally relevant?

Annalies Corbin: [00:36:08] So, Kat, I know schools struggle with that, and that you hear that all the time. This isn't about us. This is not about me. So, how do you help communities embrace those program opportunities that are bigger and broader than just them as an individual, but apply them back and make them meaningful for our students?

Kat Deaner: [00:36:27] It's a great question, Annalies. And that really gets to the heart of what we do with teachers is talk with our teachers around what is it in your community that you would like to focus on to make it better, so that we're using a tool that may be used nationwide or in another state. But how are we using it for your

community? Because we know that not all communities are the same. Not all communities have the same issues or the same cultural lens. And so, it's really is working with teachers and administrators to find that, to find that context that makes sense in their community.

Kat Deaner: [00:37:05] So, that really gets to the heart of what we do is with teachers, as we sit down, and we say, "Okay, what are problems that you want to solve in your community or in your school? What are things that you're passionate about as an educator? What are your students passionate about? What are your students, what do they really love to do? And let's integrate that within units, so that we're pulling all of this together, so that the Energy4Learning is really a tool.

Kat Deaner: [00:37:31] But really what we're doing is solving a problem that makes sense in the individual community, so that when we start to network teachers, the idea is that they're pulling ideas from other educators across the country, but they might not be replicating exactly the same. We need to be able to tailor our instructional units, so that it works for an individual community that it's going to be implemented at. There's not a one-size-fits-all in education, and we know that. So, how do we identify those problems that makes sense in a community?

Annalies Corbin: [00:38:08] Right. And that's absolutely key to the success of any program, educational programs in particular. So, as we think about wrapping here, so I always love to end

these conversations with, sort of, you know, that big lesson learned or that piece that you want to hand over to a teacher, or a community, or another business, or industry partner in any local community who's contemplating doing innovative programming, whether it's energy or anything else. You know, what's your passing shot to those folks as they go down that road? So, Ryan, you know, when you're thinking about helping others start something new, what's the thing that, to you, is the most meaningful or most powerful piece of that?

Ryan Prestel: [00:38:51] I always like to tell people that just get started. If you've got an idea with something, you know, just get started. Half the time you spend so much time

thinking about all the reasons why you can't do something, and you just never get started. So, you know, I think, that's step number one, just get started.

Ryan Prestel: [00:39:06] And I think, then, from there, you know, recognize that you will make mistakes, and that you will need to iterate on the process, and that it's not going to be, you know, this great plan that, then, we execute, and everything goes well. It's going to have these, you know, nice iterations along the way.

Ryan Prestel: [00:39:21] So, I think that, you know, when you're looking at doing anything new, and innovative, and maybe that hasn't been done before, you're going to run into a lot of skepticism. "Well, that's never going to work," or "Oh, they've done that before, and, you know, it just didn't work out the way that you would expect it to."

Ryan Prestel: [00:39:35] And, you know, I'm a big believer that, you know, for some things, you just need to try. And try it for yourself and learn it for yourself. So, you know, tune out some of that naysaying, and the skepticism, and if you really believe in what you're trying to do. And this was one, even for us, that early on, we were told this facility, don't spend your time doing this. You have so many other things that need to be doing. But it was important, and we wanted to learn that for ourselves, and we were glad that we pursued it the way that we did. Otherwise, we wouldn't be here today.

Ryan Prestel: [00:40:00] So, I think, you know, anytime you're looking at doing something new, innovative, you just need to get started. You know, learn a lot along the way, ask for feedback, and be willing to, you know, revise your plan over again.

Annalies Corbin: [00:40:10] Yeah, revise, revise, revise. **Kat Deaner:** [00:40:13] Revise.

Annalies Corbin: [00:40:13] Kat?

Kat Deaner: [00:40:13] And not be afraid of failure.

Ryan Prestel: [00:40:13] Absolutely.

Kat Deaner: [00:40:17] I think you made an excellent point there, Ryan. It's the idea of just get started and try something. Get your feet wet, try it. And it's okay if it doesn't work out the first time the way that you intended. You're going to learn from that. And not are you going to learn from that, you're going to make it better the next time. And that's truly what it means to live the design cycle, that design thinking. Let's get started. Let's try something. And we're going to evaluate it and modify it where it makes sense.

Annalies Corbin: [00:40:43] Absolutely. Well, you know, thank you very much to both of you for being on this journey with us but, also, for taking out of your day to have this conversation and to share what you've learned with others. So, thank you very much for being with us. And stay tuned. Catch the next episode of Learning Unboxed. Thank you.

Kat Deaner: [00:41:02] Thank you.

Annalies Corbin: [00:41:05] Thank you for joining us for Learning Unboxed, a conversation about teaching, learning, and the future of work. I want to thank my guests and encourage you all to be part of the conversation. Meet me on social media, @annaliescorbin. And join me next time as we stand up, step back, and lean in to reimagine education.