Dr. Jody Guarino (00:00):

I can remember a particular note-taking protocol that we had, where teachers would set smart goals: By whatever date this percentage of kids would be fluent. And then we would reflect on like, Did we get there?" And it was always this really positive celebration of like, "Wow, it can be done."

Dan Meyer (00:17):

Welcome back, folks, to Math Teacher Lounge. I'm one of your hosts, Dan Meyer.

Bethany Lockhart Johnson (00:21):

And I'm Bethany Lockhart Johnson. Hi, Dan.

Dan Meyer (00:24):

Hey, Bethany. We are currently motoring our way through our season on fluency, but before we check in with a new fantastic guest, just wanna see how you are doing in the world of math and education and life in general. Take it however you want to.

Bethany Lockhart Johnson (00:39):

I mean, any day that I get to talk about math with you and with our guests, especially in our current season of fluency, is a good day. But I am fine. I love counting with my toddler. I love trying to build on this idea that math is everywhere. And you know, sometimes he's into it. But I, I gotta tell you something my toddler loves more than counting is saying "NO" to everything. Just "No, no." I'm like, wait ... but ... this...! Dan, I don't know what I'm doing! Just in general. I don't know what I'm doing.

Dan Meyer (01:22):

Yeah, yeah. I mean that's the most honest thing a parent's ever said. <Laugh> "Dunno what I'm doing." Don't trust the parents who say they do know what they're doing. I have a question for you about this. Can I ask you — I've been on a parallel track here, on this fluency season, trying to think about fluency with my own school-aged kids. And the other day, yesterday, last night, as a matter of fact, I had this kind of math-y game book — really thoughtful book; I love it with the kids so far. The first time we used it, this thing happened where like it was like, "OK, the problem said there's 17 hippos and one of them doesn't have a block of cheese, or something. How many blocks of cheese are there?" All right? You see what's happening here, right? You see where this is going? It's trying to like get the kid to like say, "Oh, 17. I'll just like think backwards, one on the number line, or count backwards one, or something. There's a bunch of these. And one of my kids — or both, rather — would keep on direct-counting from one every time. And I'm trying to insinuate myself a little bit in the process, but definitely not trying to say this is the wrong way to do it.

Bethany Lockhart Johnson (02:31):

Yeah.

Dan Meyer (02:31):

It's, you know, effectively got the answer. But like how do you as an elementary math educator/expert think about helping the kid make their way up the ladder of abstraction towards more efficient methods? So, I just let this play out. What's my move here?

Bethany Lockhart Johnson (02:47):

You know, it's interesting, you've mentioned that before, about the counting-up or the counting-all. I think it gets your goat a little bit, Dan. 'Cause you see where they're headed and you see the power in like not counting-all. You see that power. And for me, having been a teacher of children your kiddos' age, I think if they're counting and they're counting accurately and they're making sense of the problem, I celebrate that. Right? I would then try to pose a problem of a really high number, where it would make no sense to count, like, 89 hippos, right? There's 90 hippos! So they're probably practicing decade numbers, right? So maybe there's 90 hippos and one of them doesn't have a block of cheese. Would they start at one or would they start at 90? And then maybe have a hundred chart there. Because counting backwards from a decade number, especially a high one, is tricky, right? So then they could find 90, and say, one of them does see what they do with that. I mean, personally, I wouldn't worry too much. I would say the fact that you are counting and celebrating math with your kiddos and doing it in a way that builds connection through fun stories is what really matters here. But in terms of wanting to support your kiddos in growing towards more efficient methods, that would be one suggestion. I know in my classroom, I would choose so that one of the share-outs showed somebody counting-all and one of the share-outs showed somebody who started with that number and counted-on. But not in a way that would say, "Look at this kiddo who works so much more efficiently!" Just, like, "Oh, you solved it differently." You know? Does that make sense?

Dan Meyer (04:40):
Yeah. No, I basically do that except the the share-out is me, and I'm sharing out the right method.

Bethany Lockhart Johnson (04:45):
<Laugh> The right method.

Dan Meyer (04:46):
And I'm making sure that that my kid knows that it's right. No, I hear you on that, and I really appreciate the craft, that cognitively guided instruction work does this really well, and all kinds of other areas where it's like, you gotta give the kid an experience where this more efficient method makes sense, and it feels really hard to rush it. And I'll be totally clear that this is not going on, and I'm like, "Oh no, like what future will my kid have?"

Bethany Lockhart Johnson (05:12):
<Laugh> A little bit, you are!

Dan Meyer (05:13):
"If by age five and a half, they're not..."! It's like, really, not even a little bit. But I do think it's interesting —

Bethany Lockhart Johnson (05:20):
It is interesting.

Dan Meyer (05:20):
— he's so excited to count-all! He's just like down with it! And I'm just curious what it takes to, you know, make that seem a little less appealing, or make other methods seem a little more appealing.

Bethany Lockhart Johnson (05:31):

My dear friend is an amazing teacher. She has three girls and when she had her first girl, she was so excited. She's a teacher, has all these resources, was so excited to work with her daughter and play math games and do these phonics games. Her daughter wanted nothing to do with any of it. And she had made some fun games! So my kiddo, I recognize, toddler, it is very much developmentally appropriate that he is like, absolutely <laugh> defiant, especially if it's time to leave the park. But what if he doesn't wanna play these cool math games, Dan, what do I do then?

Dan Meyer (06:09):

Yeah. I wish I could tell you that that fear is unfounded, but it is founded with me, also. I share that fear, to some degree. I have the fear that my enthusiasm will be the thing that turns my kids away from mathematics. Not that my kid would coincidentally be cold on math, but uh ... I'm not worried for you. You've got that verve, that vibe.

Bethany Lockhart Johnson (06:26):
Oh, thanks, buddy.

Dan Meyer (06:27):

I have every confidence. And that is as sentimental a vibe you'll ever get recorded on the pod with me, anyway. And Bethany. So hope you enjoyed that while it lasted. I'm pumped that we have our own areas of expertise and experience and I just love having the excuse on this pod to bring people on who have other kinds of expertise. And we've had chats so far this season with people like Lauren Carr, who have experience in individual classrooms at developing fluencies in ways that are humanizing for students. We've had people talk about assessment and how to assess fluency, with Val Henry, Dr. Val Henry. And of course people like Jason Zimba, who came on to talk about how to define fluency itself. Super-helpful. And today we're talking with someone who has a lot of experience with math fluency at the school level. What does that look like, when a school decides, "Hey, all of us, not just one individual hero teacher, but all of us, are gonna do something heroic and try to take on fluency as a project and make it a priority"? What does that look like? What kinds of moves are effective?

Bethany Lockhart Johnson (07:29):

So for all of those reasons, we're very excited to have on Dr. Jody Guarino, a former classroom teacher of 18 years who most recently taught first grade. She also served as a math coordinator through the Orange County Department of Education and she's now part of their Teaching, Learning and Instructional Leadership Collaborative team. And I have a personal connection to share here as well, because not only was Dr. Guarino my professor for many classes at UCI, but I was a teacher at the school when she was spearheading this project that we're gonna talk about today, about fluency. And so before Dr. Guarino joins us in the Lounge, let me just give a little, brief summary of this project. So, K–8 public charter school. And basically K–5, the principal had made a commitment that we were gonna focus on fluency all year long. So as a teacher, I was told, "This year, we're gonna be focusing on fluency, not only within your grade level, but we're gonna be building vertical alignment and talking about it with teachers K–5." So, from before school started: "Hey, this is our big project for the year, and we're gonna be crafting the story of fluency." What did fluency look like at this school for students? And I mean, that commitment is, I think, incredibly powerful. And to involve administration, but then also someone from outside, Dr. Guarino, who brings that like system-wide expertise and will be able to come in with a fresh vision and help guide our professional development. I just thought, "What a cool project, and how

exciting to be a part of it." And I'm so excited to welcome Dr. Guarino to the Lounge to tell us more about it. So let's welcome her. Dr. Guarino, hi! We're so excited to have you in the Lounge. Welcome.

Dr. Jody Guarino (09:24):

Hi, thank you for having me.

Dan Meyer (09:27):

We're thrilled you're here and we're always curious, for our guests who come on, about your own journey in fluency. Thinking about math fluency conjures up lots of prior images for people, that can get a little bit challenging to untangle and mesh with research. So we love to just say, "Hey, outside of math, in your own life, as personally or professionally as you want to get, where is an area that you've been trying to develop fluency? And what's something you've done to try to develop that?"

Dr. Jody Guarino (09:56):

Sure. So <laugh>, I love this question. When I listened to the first episode and heard Jason Zimba talking about roasting chicken, he got me thinking. So for me, I started doing Pilates a few years ago. And at the time, I was like learning vocabulary, and I would listen to the instructor cues and interpret them and attempt to do them. And often my attempts would be followed up with some immediate feedback from the instructor: "Make sure your knees are aligned with your ankles," or different feedback. And now, having practiced a few years, I wouldn't say I'm fluent, but my form has certainly improved, and I think it's just been practice over time and continuing to engage in the work.

Dan Meyer (10:34):

Super-helpful illustration here. Tell me about the feedback a little bit more. Have there been moments where there's feedback that works and doesn't work? And all the meta-analyses say, like, a third of attempts at feedback do worse than no feedback at all. So can you say what's been good and great feedback for you in Pilates?

Dr. Jody Guarino (10:56):

So I think there's a mix. There's certainly verbal feedback. Sometimes it's helpful to actually show people. Like, actually come up and model the move. Or reposition. So I think the feedback looks all sorts of different ways ... but it's immediate. And I think that's the big thing. And that's something that I love about Pilates. There's an instructor walking around giving everyone feedback all the time, and it's sort of an expectation to help us all get better so we're not injuring ourselves.

Bethany Lockhart Johnson (11:23):

Well, iit sounds like some of those moves that took up so much of your thought processes, so much of your working memory, that I have to like, "What am I doing? Wait, where are my knees?" Some of those things are now incorporated into your work, right? Like the fluency we hope for our kiddos.

Dr. Jody Guarino (11:41):

Totally. Yeah.

Dan Meyer (11:41):

It's awesome. The stuff that used to be hard is now your fluent edit. Which allows you to do, I assume, more complex ... Pilate moves? I call them "Pilate moves" 'cause I don't know what I'm talking about.

Dr. Jody Guarino (11:53):

<Laugh> That works.

Dan Meyer (11:54):

And just to squeeze a little more juice out of this orange, I love these conversations about extracurricular fluency. But I wonder if, with Pilates, there's ways that your own body gives you feedback that's not related to the instructor. Like, "Ah, this doesn't feel quite right. This feels a little bit awkward or even painful." And that's its own form of feedback.

Dr. Jody Guarino (12:13):

<Laugh> Totally.

Dan Meyer (12:14):

And if and when that's possible in math education. Or when you can look at a co-learner and see when a co-learner is doing the same thing a little differently, and how that happens in math education with a group of learners together. Anyway, all very interesting. Thank you for sharing.

Bethany Lockhart Johnson (12:32):

I don't know, my sweat and tears in my high school math class was giving me a lot of feedback. <Laugh>

Dan Meyer (12:39):

A lot of negative feedback?

Bethany Lockhart Johnson (12:41):

In the thick of the deepest part of my math anxiety. But I love that, and I'm picturing you — you go to that first class, you're nervous, and of course, next to you on the Reformer is somebody who you know is five years ahead of you, 10 years, 20, whatever, in their practice. And how, if it's a great instructor, they're making space for everyone. And maybe they're physically manipulating your body in a way that you're like, "Oh, that's what it feels like. OK. OK." I'm digging it. I love it. Thank you for sharing that. Thank you for, I'm telling you, I wanna go to class with you and I want to have some roast chicken with Jason Zimba. <laugh>

Dan Meyer (13:19):

<laugh>. Wait, is it actually called the Reformer?

Bethany Lockhart Johnson (13:22):

It is.That's the machine.

Dan Meyer (13:23):

OK, so you're manipulating your body in the Reformer. This sounds like the Spanish Inquisition, that torture device <laugh>.

Bethany Lockhart Johnson (13:30):

It actually kind of looks like that.

Dan Meyer (13:31):

Cool. Good to know.

Bethany Lockhart Johnson (13:32):

Anyway, as much as I have a lot more questions about your classes, what I'm so excited to share with listeners is I got to be a participant in this project, but I don't know anything about how it came to be. I know that as a teacher, our principal basically had total buy-in and was like, "Guess what we're focusing on in our PD sessions, K–5; it's fluency," and it was just such a unique experience. So before we talk about the details of the project, I would love to hear a little bit of the backstory. How did it come to be that you were leading with the principal this yearlong fluency study?

Dr. Jody Guarino (14:19):

Sure. So at the time I was a math coordinator, contracted to work with the school. And there were some comments, actually, from upper-grade teachers, like, "My students aren't fluent; I'm not sure if they can do this other thing, because kids are coming to me not knowing their math facts." So there had been this discussion, which I'm sure we've all sort of heard in different spaces. And so the principal identified this need to work on fluency. For me, it was sort of the perfect storm, because at the time I had already been working with Val Henry — who was on one of your episodes — and doing work in my own first-grade classroom in prior years based on her work. So she had done some fluency research and it had amazing results. Like, the effect size was over 1.0, and even higher for Spanish-speaking kids. So, super interesting that it had strong results. So my first-grade team and I started this work. And we had worked with Val for probably a few years. And once we got it going, we saw amazing results. So this was before Common Core, and our kids would leave first grade proficient up to what's now the second-grade fluency standard. And we had seen results that we'd never seen before. So prior to that we were doing, I think, really traditional practices — things like flashcards and timed tests. So, working with Val as a teacher really shifted my understanding of fluency. So, when my job was supporting teachers, supporting schools, supporting districts as a math coordinator at Orange County Department of Ed, at that point, the leadership of the school I had a contract to work with had identified the need to work on fluency. So when the principal of the school mentioned that, I was like, "Oh my gosh, this is great. We need to bring in Dr. Henry's work." Because I'd had such positive experiences over the last few years in my own classroom.

Bethany Lockhart Johnson (16:09):

So, what I think is interesting here is you had experienced what it looked like when as a grade level you worked on fluency, right? You experienced that. So you mentioned that social setting, you had partners, accountability buddies, to work with and say, like, "OK, I'm having this issue," or, "Whoa, this really worked well." So how did you take what you experienced in that setting? How did you use that to create something that was gonna span K–5?

Dr. Jody Guarino (16:44):

Yeah. So, I think the social nature of it was critical to me, thinking about how do we do this both as grade-level teams and a whole school? And that was something that I hadn't experienced before. When we did, it was just my first-grade team. So I was really thinking about, "How is this relevant to every

grade level at the school?" And luckily enough, upper-grade teachers saw this as a need. Like, everybody wanted fluency, and fluency for kids. That sort of made the perfect storm of everybody was in and had a shared interest in doing the work together. The school also was a very collaborative space already. And they had structures like professional learning communities; students went to specials. So there was collaboration time built into the day. So all of the structures were already there. It was more a matter of, "OK, how do we do this together?" We also ended up talking about what spaces were common. So, at this particular school, I believe Wednesdays were early-out days. So what would it look like for the whole staff to engage in this, once a month? It didn't feel like each team working in isolation, but everyone together. And in that, we also came up with the need of, like, "How would we communicate about this? And what protocols would be helpful, school-wide, so that we're all using shared language? And using language in ways that we also have shared meaning? So how do we co-construct ways that we're gonna talk about things, and even develop a shared vision? What does fluency look like and sound like? What do we want for kids and what do we want happening in classrooms?" The school was a project-based learning school, so everything was very like hands-on, really thinking about all of those things as well. At the beginning, there was a lot of development. One of the things was about, "How are we gonna know if students are making progress? What would assessment look like?" And for that, I can remember, Bethany being in your classroom, kids were playing games and we were just listening in, like, "Oh my gosh, did you notice what that student just did?" They were playing the card game Go Fish. And if they were playing Fish for five, instead of asking for pairs, if they had a three, they might ask for a two. So things like, "How are we going to watch kids doing the tests they're doing, but how will we collect and keep track of information in ways that's that's humanizing?" So we weren't gonna do any timed tests or any sort of written things that you would traditionally think about measures. But how would we do that? And how would we keep track of that information? And in terms of assessment, also thinking about, we can gain information on kids from engaging with them in activities. And then there are probably some kids that we were like, "Ooh, I'm not really sure, I'm not really sure how Presley is thinking about this particular thing, so let me go over and ask her."

Dan Meyer (19:36):

I would love to just back up a second and just replay for myself, see if I got this, and what parts I'm missing, if I could. First, there was a rationale for this: Our fluency scores, our indicators, are not where we want them to be, let's say. And there's vertical integration. Where the upper school or the middle school said, "Hey, we would love to see students coming to us with some different kinds of skills and fluency developed already." So you established that, and then if I'm hearing you right, there's just a fairly lengthy period, that my sense is, should not be shortened. Even a little bit of establishing shared goals, shared language around what we mean by fluency, what it looks like in the classroom, ideas about assessment. And you folks devised collectively other kinds of assessments that weren't the kinds that often turn kids off of fluency and give meager kinds of information but kind of environmental fluency indicators? And it sounds like that was to both predict what might be the final boss-stage indicator of the end-of-course exam, but also to give the opportunity to celebrate some wins along the way. Am am I getting that right? Those feel like some very interesting steps that other leaders could follow all the way through. What did I miss there?

Dr. Jody Guarino (20:57):

For sure. I think that's pretty much how it was. If I go back to the meaning of the word "assess," like, "to sit alongside and listen," I think that's what we did. So, kids would be playing games and we would just be sort of leaning in and maybe not saying anything but just listening to what they were doing and then internally, "Oh my gosh, that's so great, look what just happened." And sort of keeping track of that and

celebrating with kids, too. Like, "Oh, I noticed that when you had three, you asked him for a five. Like, wow." But I don't ever feel like they were being evaluated or judged, which I think assessment sometimes does. It feels like it turns more into evaluation and sort of sorting kids. And this was the total opposite of that. It was just like listening in. And then, if there was evidence that we didn't have — like, "I'm not really sure" — then we would informally just ask, like, "Hey Bethany, how did you solve that one when you got to, I don't know, nine plus six? What did you do? What did you think about?" So I think from the student perspective it was more about, "Wow, my teacher's curious about my thinking!" or "My teacher wants to listen to me, or values my ideas!" I mean, to me, that's what assessment is anyway, but it's often not the student experience. I didn't feel like there was ever pressure on kids or any sort of negative connotations around assessment. It was all like, "OK, what do they know?" And Dan, you sort of brought up that idea of like, "What can we celebrate?" Like, we've made this great progress and we're noticing this stuff, and then what's next? What do we, as teachers, do? I think every teacher would tell you one resource we don't have enough of is time. So how do we make sure we know where kids are, to think about, "OK, we need to spend a little more time on this," or, "We're ready to move on."

Dan Meyer (22:41):

What you said there seems so true to me. That that students really like and learn from teachers who like and learn from them. It feels to me like teachers who present themselves as students of their students and their thinking, that seems really powerful.

Bethany Lockhart Johnson (22:54):

Yeah, I'd love to talk a little bit more about assessment. Because what I remember as a teacher in my classroom, we definitely did one-on-one interviews with students where we'd show them an expression and we'd ask them, like, "What's two and three more? What's two and three? or what's two plus three?" And we would make detailed notes about how they solved. Did they solve like with counting? Did they just know it? Or did they use a strategy? Maybe they said, "Five." And I'd say, "Well, how did you get that?" And they'd say, "Well I knew three and three is six, so I just took one away." Now I'm not saying that's what happened. But I'm saying, "Did they use a known fact, a derived fact, to help them answer an assessment question?" So we did that and that really helped us to understand where our students were. And we would do that a couple times throughout the year with the students, like, as they progressed through the different goals. But then, like you were saying, Jody, it was so powerful to take formative assessment notes while they were playing games, while we were having class discussions. We really learned the power of everyday listening to students' thinking. And you know, those on-the-spot, in-the-moment questions as well. We learned so much from that, too. There were definitely no timed tests, definitely no timed tests. So their assessments were very relaxed, just a goal of like, "Hey, show what you know" kind of thing. And it was an important part of the assessment, but it a hundred percent wasn't the whole picture that we were building of where our class was.

Dan Meyer (24:34):

I'm sort of curious about the student experience at a little more depth. It sounds like you folks adopted a particular program ... and there's lots of programs out there. Without getting into any kind of product recommendations, let's say, what are the features of the student experience, as compared to, perhaps, what they were experiencing before this wholesale shift in approach at the school level?

Dr. Jody Guarino (24:59):

Absolutely. So, this work was grounded in some research principles, one of which was we spent 10 to 15 minutes a day on fluency. We used Dr. Valerie Henry's work. And in her research findings, it didn't matter if you spent 10 minutes or 30 minutes — you would get the same results. So we were really just spending five to 10 minutes a day. And it was a lot of games. And there was sort of a progression from concrete to representational to abstract. So an example of a concrete game: You might picture those two color counters, those yellow and red counters. And kids might have five counters and they would just sort of shake them or toss them and count. Like, "Oh, I got four and one," and do it again and "I got three and two." How many times can they do that in five to 10 minutes? And every time, it's just repeated practice of four and one, three and two, five and zero. They were all red. So that was an example of a concrete activity. And an example of an abstract activity, as I mentioned before, the game Go Fish. So if we're working on facts of 10, then maybe we're looking for pairs of 10. So the student experience was very much like games. The other thing that I should mention — and this sort of going back to even my Pilates experience — was this idea of immediate feedback. So most of the activities kids did in pairs. So they were constantly getting feedback from their partner. If they had a six and were asking for a four, you know, and their partner gave 'em a four, and they realized, "Wait a minute, that wasn't the right number," they would get instant feedback, rather than practicing something incorrectly. And then it also didn't take the role of the teacher, because it wasn't the teacher walking around giving feedback; it was sort of built into the structure of all of the activities. So I think for kids, fluency was fun. And, you know, they might come in from recess like, "Oh, now we get to play with the counters!" or "...play cards!" or whatever. I don't think they ever looked at it as, "Ohhh, fluency."

Bethany Lockhart Johnson (27:01):

I remember we did, after the five to 10 minutes or whatever — I think it ended up being about 15, because we'd pull students back to the carpet to have a quick conversation about what they had just done, like, "What did you notice?" or "What did you know?" Maybe questions we'd come up with ahead of time. And then sometimes it was just things we'd seen based on strategies: "When I was walking around, I saw Jody and Dan doing this really interesting thing. They had these counters and they were using it to..." and we we'd pull out experiences. And I felt that coming back together cemented the learning, in a way. Yes, it was games, but it also gave the opportunity for reflection on the experience that the students had just had.

Dr. Jody Guarino (27:49):

For sure. That feels like, Bethany, one of the most critical pieces. Because I think prior to that ... I mean, everybody does a lot of games in their classroom. And sometimes I think kids are just taking away, "Oh, it's game time," versus actually, as you're talking about, those debriefs. Like, "OK, what did you notice about different ways to make 10?" or "Were there particular ways that were easy for you to think about and other ones that you're still working on?" We also spent a lot of time that year, as I mentioned, in the monthly staff meetings, really thinking about, "How would we even make public records from those debriefs?" So I can still picture, Bethany, one of the charts in your room was Ways to Make Five. And so, whether kids were working with connecting Unifix cubes, or a common task with little kids was "show me five," where they would just hold up their hand, or "show me four," and then they might show five in two ways and talk about ... a lot of times kids did something like this, where they were putting a stick or a pencil between their fingers: Like, five is two and three. And I think about all of those sort of charts, because that really also led to S & P Seven. Like, seeing and using structure as they're thinking about math fluency and facts and relationships between things. So that was a really important piece, the debrief and then the public records or the charting that came from that as well.

Bethany Lockhart Johnson (29:07):

So before we talk about how you saw this evolving over the year, I wanna just help frame it a little bit. Because I think something that was so interesting is you did such a good job of basically getting us invested. You and the principal did a very good job of getting us invested in, "I'm teaching kindergarten, but all of these students are our students. We care about what they're gonna be encountering next. And what if you're a student in this school —what will your experience of fluency be, K–5?" And initially, there really weren't these touchstones that we could speak to. We may have all had similar training, but it was that norming — getting on the same page about what fluency sounds like, what it looks like, how do we talk about it, what are experiences and activities that students can do in this grade — that could carry over to the next grade. And so, I think if folks are listening and they're thinking, "Well what could this look like?" I think it's really important to emphasize that norming that you talked about. And then, also, those structures that you mentioned were in place. Weekly, we were meeting as a staff in your team, your grade-level team. So, every week, you met together with your other direct peers in your grade level, and you're working on this for a part of the staff meeting, but then at one of our staff meetings that month, we'd come together K–5 and do those check-ins where we are crafting that story, K–5, and really using those protocols that you helped to build. So I am inserting that because I feel like as you're talking, I'm reflecting on, "Oh, I feel like that's some of the reasons why it worked." I don't know, I was really excited to be a part of that. And I feel like as you're talking about it, I'm remembering how intentional you were about those pieces to help build this project.

Dr. Jody Guarino (31:08):

I think that's huge, and comes back to that idea, even, of our vision of learning in community. What do we think it means to learn and even to collaborate? The entire school was working toward the same goal, with the same vision. So I think it also offered ... the goal was not around team-building and community-building, but I think it actually did that at the same time. Because we all wanted the same thing. And as you mentioned, it was like we were all here for all kids. So how do we navigate this together? I think the other thing was that before we had these systems in place, every teacher had two days of professional learning. And I think that's another important thing. Because I feel it's pretty easy to go to professional learning and be like, "OK, yeah, I wanna do that. I totally buy in. I did those activities and I'm excited." And I go back to my space and I try some things and then I'm like, "Now what? I'm not really sure what to do next." And so I think the value in that was having people in community to try things with. Far beyond ... it's one thing to go to professional learning and even, "YES! That is what I want!" But then to go back and you're sort of on your own, isolated, to "What was that thing again?" Or you know, once you jump in, you have questions that you didn't have, for the two days that you were sitting there, right?

Bethany Lockhart Johnson (32:26):

What do you do with those conference notes, right? You went to this great session, you're fired up, or you're listening to this podcast, and you're like, "Ooh, I wanna try this," but what could you put into place that allows that to be possible?

Dr. Jody Guarino (32:39):

Yeah. And how do you do that with other people? Right? So that you're sort of comparing conference notes, or "What did you do with that?" or "How did you take up that idea?" or "How are you making sense of it?" So that, to me, was the beauty in this whole thing. It was building upon a shared experience everyone had, but navigating it together.

Dan Meyer (32:57):

I'd love to think about — just briefly, here — how teachers developed. Obviously the students developed in some fantastic ways. I am always just dazzled and kind of scared to think about how secondary teachers know a lot about one thing and primary teachers need to know a lot about a lot of things. And that seems like a real challenge. So, when you talk about debriefs and creating takeaways with students, there's a lot of math knowledge and pedagogical content knowledge going on there. How did teachers develop that? Was that through the two PD days, primarily? Through Val Henry's work? Or were there elements throughout the PLCs or throughout the year that result in teachers feeling more confident to do more than just say, "OK it is time for these intentionally designed games," but to make more out of it?

Dr. Jody Guarino (33:45):

I would say all of the above! I think certainly there was a lot to gain from the professional learning. I mean, for a lot of us it was like, "Oh, that's what fluency looks like and sounds like!" I know before I started working with Val, to me it was like, "Memorize facts," and just, automaticity, where I hadn't really thought about strategies and student flexibility. So, I think there was a lot of learning about that content knowledge. And even, like, why does that matter? So that was a huge thing. Because I think memorizing your facts is different than, you know, "If I know nine plus six is 15, how does that help me when I'm working with 39 plus 26?" Like, these ways of thinking. So I think it supported, actually, teacher flexibility and thinking, too. I know it did for me. Like, I would say I have a different level of fluency from doing this work myself. I think, also, as you're mentioning vision and beliefs, that was huge. So seeing that kids actually can do this was so powerful. Bethany, I think about kindergarten — the goal at the time was fluency to five. And at some point, we were like, "Whoa, we're not even halfway through the year, and kids have got it. They've got the end of the grade-level standard, halfway through the year. Oh my gosh, what do we do now?" And I think there was a lot of energy and excitement around that, because maybe we hadn't been successful before, or actually had this vision of like what it could look like. So, I think it definitely impacted teachers' vision of what could be, and also beliefs, because we saw it with our own kids. We saw it with the kids that, you know, prior, we had thought, "They're not fluent." And now, it's like, "Wait a minute! They are!" And it was these things that we did that led them to this! So I think there was — I don't know — celebration, in that I can remember a particular note-taking sort of protocol that we had, where teachers would set, like, smart goals: "By whatever date this percentage of kids would be fluent!" And then we would reflect on, like, "Did we get there?" And it was always this really positive celebration of, "Wow, it can be done!" And at the beginning, we were sort of setting arbitrary goals, like, "What does it look like to work toward 10 over a year?" and just kind of pacing it. Versus now: Like, "Oh my gosh, that actually worked, and we made it work." And also, pedagogically, as we had mentioned, or Bethany mentioned, the charting. There was a lot of conversations about that. Like, "I wanna have a debrief after we do this activity, but I don't really know the question I might ask." Or, "I asked this question and kids just stared at me and it fell flat." So then somebody might suggest, "Well, try this." Or "What do you think about this other idea?" So I think every single thing led to learning. Whether it was the professional learning, the collaboration in practice, watching kids do things that we were like, "Whoa, that was really effective" or "I'm not sure they're really taking away what I was hoping for in this particular activity." So I'd say a lot of learning to learn, from teaching. I dunno. Bethany, does that resonate with your experience?

Bethany Lockhart Johnson (36:46):

Yeah, absolutely. It's really nice to hear you reflect on it. 'Cause it's making me think about, there was so much power in focusing on that, and having such investment from the principal, with your expertise,

with Dr. Henry's research. But I wanna make sure that as we are sharing this, I want folks who are listening to be able to take away like, "Yeah, if your school can can focus on this, imagine the power," right? But realistically, how do we as educators ... I mean, maybe we are able to head in that direction, but what are some things that would be your biggest takeaways from the whole experience? For educators, what advice would you want to leave them with that maybe you learned from this experience? And I feel like you've already shared a lot of those keys throughout, but maybe if there's anything else in particular...?

Dr. Jody Guarino (37:46):

I guess one of the things — or this is two things together — I think it takes time and it takes friends. So what we're describing, that was over an entire year-long process. So, I think one of the things is not to give up, but just keep trying different things and reflecting on progress. What's working, what's not working. And when I say it takes time and friends, at least in that situation, I think there was a lot of leaning into each other. So I think, if people are interested in working on fluency, finding a friend — even if that friend isn't at your school or at your grade level — who can be that accountability partner or thought partner, that you can lean on each other as you're doing this. I think another really important thing is to sort of have a shared vision and shared goals that you're working on together. So, what does fluency look like and sound like? For me, another big thing when I started this was just learning.I wasn't up to speed on fluency research, and I didn't really have any ideas of anything beyond my flashcards and timed tests. So that could be a big thing too — just looking at some research, or what's out there that's also aligned with your philosophy and beliefs. So, as I mentioned, the assessment things that we use ... like, how do you make sure whatever you're doing is aligned with the experiences that you want for kids? And what you want to be remembered by as contributing? Like, I certainly don't wanna be remembered as, you know, the time that I started hating math in third grade because I didn't know my math facts, and I was that teacher, or whatever. So what do we really want for our kids? That feels like a really important thing. The other thing I would say in our work that I didn't talk about at all is the role of the administrator. And the understanding. And I think that is so pivotal. Because in that situation, the principal was really supportive in creating structures and time, and not moving onto the next thing. Like, "Oh yeah, we met about fluency next last week; we're done now."

Bethany Lockhart Johnson (39:50):

Absolutely, absolutely.

Dr. Jody Guarino (39:51):

Like, really understood that it was a journey. But also, in terms of principals, allocating the resources, the people, the time, the funding for the professional learning. And making decisions that were aligned to that, versus what if he had gone out in the middle of the year and just been like, "Yeah, I'm over that. I'm gonna go get some computer game." Or something. Like, the level of understanding and vision of the leader seemed really important too. So, I would say, if people are starting this on their own, bring in your leader with you. And have them experience the same sort of things you're working on together. Feels like it could be useful.

Bethany Lockhart Johnson (40:29):

That's also useful! And I want to thank you for being a part of creating this opportunity, and sharing your insights. I know it's hard to sum up a year-long project in <laugh> the span of a podcast. But I feel like

some of those really key touchstones that helped ground that story of fluency K–5, you were able to share that. Really, really appreciate you joining us in the Lounge, Dr. Guarino.

Dr. Jody Guarino (40:57):
Well, thank you for having me.

Bethany Lockhart Johnson (40:58):
Come back any time.

Dan Meyer (41:00):
Thank you so much. Take care.

Bethany Lockhart Johnson (41:02):
Thanks so much for listening to our conversation with Dr. Jody Guarino, former classroom teacher who is now part of the Orange County Department of Education Teaching, Learning and Instructional Leadership Collaborative team. Check out the show notes for links to more resources. And let us know what you thought of this episode. I am fired up. I'm all excited thinking about this project, and remembering being a part of it, and I'm just like, "Let's go! Let's go do more fluency things!" It was a lot of fun. Visit us in our Facebook discussion group, Math Teacher Lounge: The Community. And to make sure that you don't miss any new episode in our season-long deep dive into math fluency, you can subscribe to Math Teacher Lounge podcasts on any and all podcast platforms. And let me tell you, the best way to share the love is with a review, or let your let your friends know. Let your teacher friends know. Maybe there's an idea that that sparked for you, and you can say, "Hey, give this a listen. Hey, you wanna try something? You wanna team up and try this, and report back?" And then message us and tell us what you did. See, it's a community. You can find more information on all of Amplify's shows at our podcast hub. Go to Amplify.com/hub. And finally, here's a little sneak preview of what's to come on our next episode.

Myuriel von Aspen (42:24):
For some children, we — the teachers — might be the only ones that can support them with the work of fluency, of learning their math facts. Because maybe they have parents at home that are working two jobs, three jobs, and may not have those opportunities that other children have at home. And so, taking away those opportunities from our students, we're taking away the chance for them to learn higher math later on. Because we are what they have to learn those foundational skills.

Bethany Lockhart Johnson (42:55):
We hope you'll join us next time on Math Teacher Lounge. Thanks so much for listening.