Faculty Debrief Part F:

PHIL TUCHER: Don't know if you agree, I thought when they said, "Add the zero," that was a time to formalize the difference between an expression and an equation. That they know an expression and they know an equation, but to have words for the difference that had a little bit more connection than just adding a zero. I would push you on that one.

BARBARA SHREVE: It's a missed opportunity.

PHIL TUCHER: Um, you had other ideas though. You wanted to go into whether the access was there, whether it was the right start, and whether there was more information, and even whether you wanted to go into more graphing. Do some of those feel resolved? And do some of those feel like we should explore them?

BARBARA SHREVE: I think some of them feel resolved thinking about how to give access to the language and what's on the page. Um, I don't think with this choice, it makes sense to go to graphing. I think it would be choosing actually a different problem for them to wrestle with that was about x-intercepts that would make sense to attach to a graph. Unless that was a misconception I wanted to put out there.

PHIL TUCHER: A closure activity once they've seen all these different connections around the quadratics and the graphing. A "Who's Right?" that goes at the end that gets at a different one. Why did you choose a "Who's Right?" to start with?

BARBARA SHREVE: I want – there are particular mistakes that students are making that I wanted to be able to talk about, not attached to them. And sometimes I've been able to take advantage of opportunities where kids have made mistakes and I can call it my favorite mistake or the mistake I'm so glad they made so we can talk about it. Um, but I've tried not to do that too much and there's some consistent things that I'm seeing that are kind of related to this that I wanted to catch early, so I decided to put them on the table.

PHIL TUCHER: It's brilliant. I think we may not have named that in one of the strengths but to me the strength of the lesson is that the lesson names for kids or puts right in front of kids, “here are the mistakes that kids make, here are the mistakes that you're making.” And just to say to kids, "Let's talk about them and let's unpack what's happening." I thought it was brilliant. I also like that the "Who's Right?" is a closed question but it goes in some really – It's like a converging question. It's either a, or b, or c. It's either Stefan, or Katie, or Miguel. Um, and yet it opens up "Well, actually it could be right if you do this next," and it did just that for kids, I think. It gave them a way to answer the question "How many think Miguel got that? How many think Miguel is the correct answer?" Um, so I like, I mean, from the point of view of access, I really like that the task does provide that access. It does say, "Here are three samples" and kids can kind of lock on to one of them, and then try to reason around it. Um, share if you would, I think the "Who's Right?" structure and also the matching structure have that in common, have this idea that they're looking at thinking and they're re-engaging with this idea of what must be happening for that to be the answer, or for that to be the first step. For both the "Who's Right?" and also for the matching exercise, talk about your own – where did you first see this kind of problem?

When do you use these kinds of problems? Tell me your own use of these two structures, these two activities in your teaching.

BARBARA SHREVE: The "Who's Right?" um, and this kind of sample student conversation, I saw in a colleague's geometry curriculum from here. Laura Evans had created some activities where this happened. And I at first saw the problems and didn't expect very much of them. And then in front of kids, I was fascinated by how much they actually took people's sides and argued when the questions were posed at the right level. Um, because it allowed them to try out ideas, like to not commit to a first – to a path right away. They got to consider multiple paths that were on paper and often I don't see my students putting the multiple paths on paper to compare. They're trying to decide in their heads before they commit pencil to paper. And so I've liked watching what that does to really put answers out there. Um, and to help model what can happen in their teams, and what kind of debate is okay in their teams, even when all three people or four people at the table are generating those different starts. I've done very little matching. This is one of the few times that I do it or have done it. So it came about in this activity because of the volume of stuff I wanted them to look at. I wanted them to be able to look at all these different things side by side. And because they can be fairly number intensive and mechanically intensive, students don't get that volume in front of them necessarily quickly enough if I make them – if they're trying to work through the entire thing and problematize that, so.

PHIL TUCHER: Are there pitfalls to the structures? I mean especially the matching. Is it a problem that they don't get to do the mechanics, or what's your experience there?

BARBARA SHREVE: I think this lesson is more powerful when they get to a final page where they do. And I think that that's where they get to see the benefit of having thought through these different starts. And I don't know that it came together as well as I would want it to today. And I think if it was not an every other day class, like they could come back tomorrow and get right into that, I think it would be much more useful. But hopefully they'll actually do some in their Algebra B classes today and get to apply it right away there.

PHIL TUCHER: Yeah. Well, I really, I asked that genuinely trying to understand when can these structures help kids. I love the way you explain it, especially on the "Who's Right?" The idea that you've got this way of fast tracking a role play, “take a side and argue it” and that argument is okay. But I really, I think you've named it, that they can consider multiple paths, and if they can get those multiple paths more quickly, like you said, they won't lock in on just one. And then they can actually model these debates, how it could look. And it strikes me that maybe something similar is happening with matching, that they can consider multiple paths or multiple answers without having to do all the lengthy mechanics at that point. So thank you.

BARBARA SHREVE: Thank you. I'm actually excited because I get to try this lesson with a different group of students.

PHIL TUCHER: You do?

BARBARA SHREVE: In our next, tomorrow, or in our next class which'll be on a Monday, but I'm excited to try some of the things that we've talked about. Change it to see how it would go differently.

PHIL TUCHER: And I can't wait to hear how that goes.