TRANSCRIPT

Formative Assessment and Self-Regulated Learning

REINO MAKKONEN

I want to welcome everybody. First of all, I want to give a brief overview of the session. I think we're all here to build some shared understanding of formative assessment and self-regulated learning and to benefit students. And we'll just give an overview of the session before we kick it off. Margaret is coming to talk about a recently developed theory of action underlying formative assessment. She has been…I think if you're here you probably know Margaret's work. She has published a great deal on this, but she worked very carefully with a group of states for several years. To really think about the definitions and understanding the theory under this as well as what we're talking about here and the different constructs that are applied. So, we're going to have a few minutes—about 10 to 15 minutes with Margaret. Then we're going to shift and Zoom into Arizona, which has been working…is one of the states that has worked on the collaborative and also has been working in…several districts have been working on this.

So, both Lenay and Marie are going to give an overview of the Arizona context and sort of situate the study. Then I will present some findings from our study that came out about two weeks ago. I think that the link is in the chat and we have survey results from over 1,200 teachers and 24,000 students across Arizona, around these issues that we're talking about. That's going to be a good chunk of time, about 40 to 45 minutes. And then we're going to have a Q&A—about 10-minute Q&A block—after that part three, when I speak. After that 10-minute Q&A, Pam is going to speak about some of the work in Sunnyside Unified over the past several years to really promote formative assessment and self-regulated learning in classrooms over time. And then after Pam speaks, we'll have another 15-minute Q&A.

Enough for me for the moment. I wanted to kick it to Margaret, who has been as extensively published on this issue. She is a world-recognized academic on these issues. She most recently was at UCLA and WestEd. One of her recent books is one of my personal favorites—*Self-Regulation in Learning: The Role of Language and Formative Assessment*, which was a key influence on the study as well as the CCSSO work that she's going to talk about. Thank you, Margaret, for being here and we're really excited and thank everybody for being in the audience.

MARGARET HERITAGE

Thank you, Reino. I'm delighted to be here. Good afternoon from California where it's a beautiful, sunny day. Sorry for all of you on the East Coast, but there we are. So, my job is to describe the development and content of the theory of action which, as Reino says, underlies the study that he's going to talk to you about today. The theory of action was developed by a group of state representatives, the formative assessment for students and teachers and students' standards, commonly known as the FAST SCASS, and I did note that we have some

former members of the FAST SCASS on the webinar today, so a particular welcome to them. You can keep me straight. The group that I had the privilege of being the advisor for about 10 years was established in 2006 and there were about 20 or so state members at any one time.

The goal of the FAST SCASS was to advocate for formative assessment in their states and more broadly to increase members' knowledge of formative assessment and to develop resources for the states to implement formative assessment. And these resources were made available to other states as well. And the theory of action that I'm going to share with you today was one of the resources that the FAST SCASS developed to support its efforts. About 2008, a couple of years after the formation of the FAST SCASS, the group developed a definition which was revised in 2018. Revised to really reflect new ideas about formative assessment from both research and evidence-based practice. And you can see the changes to the original definition in red on the screen here. First of all, a planned ongoing process. It's not serendipitous, but it's planned, used by all students and teachers during learning and teaching, with the goal of eliciting and using evidence of student learning to improve understanding of intended disciplinary learning outcomes.

And we added the disciplinary component here to really reflect the movement of the field to really be thinking about how formative assessment is grounded in the disciplines in which it takes place. And then the third part here, which we will hear a lot more about the focus of the webinar today, is supporting students to become self-directed learners. Self-directed is the term the FAST SCASS use rather than self-regulated because, in general, they thought it was more user friendly. And I have some sympathy with that view. But just to unpack this idea of self-regulation for a second, it's really comprises four processes. The first one is setting goals— that an individual sets goals for him or herself and then the individual engages in metacognitive monitoring of progress toward the goal while they're engaged in the actions intended to get them to that goal.

And in this, the metacognitive monitoring comes from informative assessment, from self-assessment, which is something that obviously needs to be developed among students. And then, finally, from the internal feedback they're getting from this monitoring, they make decisions about whether different actions needed or adjustments need to be made. Whether the goal needs to be re-tweaked or they need to establish a new goal. And research has found, which was one of the reasons that we were particularly interested in thinking about this in relation to formative assessment—that researchers have found when students are involved, engaged in self-directed, self-regulatory learning processes, they become more engaged in their learning and ultimately reach higher levels of achievement. And so, self-regulation is important in school, but it's increasingly seen across the world as just as important to the development of lifelong learning skills that will have engaged students as they enter college and the workplace and life in general.

Now, the idea of the theory of action came from these three international consultants. And I did notice that Bronwen Cowie from New Zealand is in the session today. And I couldn't be more delighted that Bronwen's here because she is just a stellar thinker and grounded very much in practice as well as her scholarship. So, we were fortunate to receive funding from the Hewlett Foundation to be able to engage with these scholars over a course of three years. They came to the U.S. to work with us and they brought perspectives from their home countries and from their own research to broaden and deepen the FAST SCASS members' thinking. They encouraged the group; this was about the second year they were with us. They said to us, "You

need a theory of action." And so we decided, yes, we would follow their advice, and we did need a theory of action, for the member states could use to both evaluate and strengthen the implementation of formative assessment in their respective states.

We did actually develop two rather different theories of action and the one I'm going to show you today is a Program Evaluation Theory of Action. The other one, if you're interested you can read about it in the paper published by CCSSO and actually available, I believe, through or after this webinar. The Program Theory of Action there, just to give you a little bit of background quickly, it's really a logic model that shows the key stakeholders, the program components, the intermediate outcomes, and the ultimate desired outcomes. The logic model describes the sequence of activities that are intended to bring about the change. And in this case the change being increased use of formative assessment to support students' self-regulation and how those activities are linked to the results that the program is expected to achieve. In the model, the chain of reasoning and events or outcomes that a program intends to set in motion are made explicit.

This was our goal to develop a program evaluation theory of action. And we started with the members thinking about two questions. Why do we think formative assessment is important and what's necessary to make it possible in the system, or rather across the whole system? And then we began an iterative process of development with support from Christine Line, from Educational Testing Service and Caroline Wiley, who was ultimately a co-advisor with me and also on the webinar today, and, of course, feedback from our international experts. The first SCASS determined that these were the inputs for the theory of action which are required at all levels of the system. And the levels of the system are represented by the icons on the left. So, top to bottom: the state, communities, districts, schools, and students, and all these levels were present and reflected in the theory of action. Let me just briefly describe what these are, going from top to bottom.

First of all, a shared definition and understanding of formative assessment across the system that was deemed as extremely important for this theory of action. That policies must be reviewed and prioritized with a focus on the conditions that are necessary to support the implementation of formative assessment across the state, committed staff and leadership. And also change agents, partnering; for example, WestEd is a very well-known change agent and partner with many organizations in order to make change in the system. Opportunities. Everybody across the board had to have opportunities to engage in professional learning related to formative assessment and disciplinary knowledge. State and district stakeholders needed to prioritize the development and provision of supports and resources for teachers. So, these were all the components that feed into the theory of action.

Now, here's the logic model, the theory of action. It's constructed as a series of hypothesized claims which were derived from the literature from support from our international colleagues and the FAST SCASS members' knowledge and experience. And these are represented by the blue circles with the capital letters inside them. Each of the boxes identifies a specific outcome and the arrows illustrate how outcomes work together to achieve the ultimate goals. And so, if you can click, we'll see what the ultimate goals are in these brown circles here. The ultimate goals were increases in K–12 learning, that formative assessment would promote, and also pre-service teacher quality. I don't have time to talk about that but the teacher quality aspect including pre-service was important for members. And then you can see here, the

increased engagement, independence, self-direction, and identification as a lifelong learner by all stakeholders and learners. Those were the ultimate goals.

Let's now go back and look, first of all, at these various claims and their relationships to each other. So, starting with claim A, on the top right, claim A hypothesizes that when all the components that I showed you on the previous slide are present, that buy-in for formative assessment increases across the system. And this was really important to FAST SCASS members, the buy-in component. If we move to claim B, which is the bottom left of the screen, this hypothesizes when these same components—as you can see the arrow coming in from the line on the left—when these same components are present, there's increased knowledge of formative assessment, disciplinary content, and related learning outcomes. Moving to claim C, between claim A and claim B on the left, again, coming in from those same components when they're present, consistent and prioritized policies for formative assessment are in place.

Moving further right now to claim D. This hypothesizes that when policies support the implementation of formative assessment and stakeholders at all levels of the system have knowledge of formative assessment and its relationship to disciplinary content, the intentional and ongoing use of formative assessment to improve teaching and learning will increase in quality and frequency. Moving to claim D at the bottom, in the middle of the diagram. This hypothesizes that when teachers implement formative assessment in intentional, important, intentional ongoing ways. It's an ongoing process as noted in the definition, when they implement that it connects directly to the final outcome. You can see that teachers, learners are more engaged, independent, and self-directed and consider themselves lifelong learners. So, back to the middle and slightly up in the middle, we can see claim F. When teachers implement formative assessment in intentional, ongoing ways, then we're confident and satisfied. And that was something the FAST SCASS members felt very strongly about based on their experiences of working with teachers in their own states.

Claim G now, further to the right, when teachers implement formative assessment in intentional ongoing ways and the more confident and satisfied the quality of teaching increases for both experienced and novice teachers. Moving to claim H, on the right, this is related to two outcomes. The first is hypothesized that when teachers are more confident and satisfied and the implementation of quality teaching practices increases, so does teachers' retention; was a strong feeling among the groups on that point. And then claim I, the two blue circles to the right of your screen, hypothesized that when the implementation of quality teaching practice increases and teacher retention increases, student learning increases as well. And then finally claim J, the right there, far right. Two related components— when student learning increases, learners are more likely to be self-directed, engaged, independent, and lifelong learners. And, also, they consider themselves like when they're engaged, et cetera, student learning increases, which is the whole goal of this.

The model is cyclical, as you can see. Moving from the brown box is the claim A moves back to the claim A on the left-hand side of the screen that increased by and which further supports efforts to continuously improve practice. So, this is a cyclical process of evaluation of the program. I'd like to turn this over to Lenay Dunn and Marie Mancuso, who were going to give you some background to the study.

LENAY DUNN

Thank you so much, Margaret. Marie and I are gonna give a little bit of the context in Arizona that led to the impetus for this study and sort of how Arizona was interested in taking that theory of action that Margaret just laid out for you, that logic model, and testing some of those relationships. So, as Laura mentioned in the beginning, this work was done under REL West. And one of our… and really the heart of the work that we do is thinking about how do we bring data and research to inform decisions that will ultimately improve academic outcomes for students. And so, that is through applied research and analytic technical assistance. And this study really fits squarely within that applied research of how do we learn from and better understand some of the relationships. So, in Arizona, this work was really done through an alliance that Reino Makkonen—who you're going to hear from in just a minute—through his alliance, and this alliance is the Educator Effectiveness Alliance.

And it's a cross-state alliance partnership of very long standing through Arizona, Nevada, and Utah, who were really looking to think about how can you bring evidence-based supports to teachers and principals. And this work really fit within that. The alliance activities were around regional events, taking evidence, understanding that evidence, and then going and trying it and applying it in their setting. And so, that Educator Effectiveness Alliance, we drilled down into the Arizona work in that alliance to focus on some of this formative assessment piece within the context of improving teacher effectiveness. Marie, I'm going to hand it over to you to talk a little bit about what that work looks like in Arizona.

MARIE MANCUSO

Thank you, Lenay. So, as Lenay said, part of the educator effectiveness work in Arizona specifically focused on formative assessment, which really set the stage for the work that the three districts in this study are doing. In 2015, partnering with the Regional Comprehensive Center and REL West, the Arizona Department of Education launched a formative assessment initiative to provide support and assistance to LEAs. And I think this really refers back to what Margaret was saying about the levels of the system, that Arizona's intention was to really address all levels of the system in this initiative at the state level, the district level, the school level, and the classroom level. So, they began with staff professional development for ADE staff to establish a common definition and understanding so that they could communicate to the field in one voice.

They supported a series of web-based professional learning opportunities for teachers and leaders on formative assessment practice and its relationship to student identity and agency. They sponsored a statewide community of practice where teachers and leaders shared what they were learning and what their students were doing. They provided to the field resources to support practitioners' implementation. And they participated as an active member of CCSSO's FAST SCASS, which Margaret talked about earlier. Currently in Arizona, the ADE is in the process of developing a teaching and learning framework in which formative assessment is embedded and the Sunnyside School District, one of the districts in this study and presenting today, is preparing to be the first demonstration site in this state to provide educators the opportunity to see formative assessment in practice. With that Arizona context, I'm going to turn this over to Reino Makkonen, the lead researcher on this study, to talk about what we learned from this study in those three districts.

Thank you, Marie, and thank you, Margaret, for the introduction. So, that really set the stage both in Arizona and in the field for the FAST SCASS work was, I think, it's really ready, got us real prepared for joining this study and examining the association between teacher formative assessment and students' self-regulated learning. So, if you think about the logic model that Margaret laid out, it really would've been claim E at the bottom there connecting classroom practices to student self-direction, which we're calling self-regulated learning, and also the folks we were able to work with, as the next slide shows. We were able to engage with folks who had been working with the larger state formal assessment summits to start exploring these issues in more detail. So, it's really a nice…the timing of the study worked out really well. What the other study got underway was we worked with Chandler Unified School District, Flagstaff Unified, and Sunnyside Unified, and they agreed to survey their students and teachers in grades 3 to 12 in spring of last year, spring of 2019. In total, we've got over 1,200 teachers and 24,000 students responded.

Now, it wasn't all students and teachers; the response rates for both students and teachers were pretty consistent across the three districts. We'll take that. I'll talk more about that later but it's a large pool of folks across different contexts and we want to keep that in mind. And I wanted to acknowledge the folks, several of whom I know are on today's session. I wanted to personally thank Renee Sweeden and Amber Stouard from Chandler Unified, as well as Robert Hagstrom from Flagstaff, and Pam that you'll hear from later and Ed Dawson at Sunnyside. They were real partners in this study. We worked together very closely to get these data collected and to really work to understand teaching and learning in these contexts. The study really looked at the relationships between first, descriptively. What self-regulated learning strategies do students report using in the classroom? And for the student survey, we relied on existing validated instruments, the motivated strategies for learning questionnaire was one. There are self-regulated learning subscale as well as the piece of the program for international student assessment by OACD. They have a learning strategy subscale, they ask questions about their learning strategies. Those were the items from those scales, were developed in collaboration between myself and the district leaders to get the survey items that you'll see on the subsequent slides.

Also, what form of assessment practices that teachers report using in the classroom? I know a lot of these questions came from the formative assessment rubrics, reflection, and observation protocol. That is the FARROP, as it is known colloquially. And as folks probably have experience with that, that is where the teacher survey question is from. So, the first two questions are really descriptive survey items about practices. The third question was the types of formative assessment training that teachers reported participating in. We'll talk about that. Then we get into more of the relationships we're trying to test in the study. The amount and type of training was the amount and type of training associated with the practices they reported and the self-regulated learning strategies that their students reported using during the week. Looking, exploring the impact of training or the relationships with training. And then finally, our students' self-regulated learning strategies that they report associated with their teacher's form of assessment practices.

So those were really the research topics, the questions that guided the study, but students were asked on the surveys that were online on the three districts, "How often do the following things happen during a normal week for you? Please be honest, there are no right or wrong

answers." As you can see in the left column, those were the items that were presented to the kids. And the answer was, the response scale was from never to always, as you can see at the bottom. So, the bands indicate the proportion of students who responded in each of those categories, for each of these questions, for each of these items. And the lows are organized from, say, most frequent to least frequent, that is, the highest proportion of students either most of the time are always engaged in this practice. And you can see at the top, we've sort of drive the headline out as students do frequently track their own progress during the week, but they less often solicit feedback from the teacher or peers.

So, if you look at the bottom there, they're less frequently engaging in those practices. And it's very interesting, like these rankings, this ordering was the same across the districts and there were no significant differences between elementary or secondary students. The most frequent activities that were reported were the most frequent across subgroups and across contexts. That's interesting to keep in mind as we talk. We'll talk more about some things as we explore differently but it's interesting to present here.

The next slide is the teacher context—the slide is set up very similarly. Teachers were asked to indicate how regularly you engage in the following formative assessment practices in your classroom during the average week. And again, response scale raised from, ranged from never to always, and the item stems are on the left side of the slide here. And again organized from most frequent to least frequent. And again, the headline's at the top. "I provide feedback to students to help them take steps for improvement." That seems to be the most frequent activity that teachers reported. Whereas down at the bottom, if you look at the bottom rows, "I provide structured occasions for students to provide feedback to each other" was less frequently relatively, less frequently reported as well as "My students assess their own learning and think about next steps in class" was also relatively less frequently reported. And again, there were no significant differences here between teachers at different grade span. So, the relative ranking of these practices from most to least frequent was the same across contexts.

It was descriptive questions, just the ranking. They were very parallel across contexts. And then looking at the training slides. So, this was… We really wanted to get into the training. It was a little bit tricky in that the reported…the way that they call trainings or label trainings were hard to sort of codify for us. And this is going back to the response rate that are known at the beginning. I want you to know here that about almost 90% of the teacher respondents had some exposure to formative assessment before they responded to the survey. That's sort of the thing about the sample of teachers who responded, they had some exposure to formative assessment in general and sort of color sort of interpretations of all this. And we think about who we're talking about here. Half of those folks reported receiving their training more informally at their site. So, it was through either peer mentoring, observation, or collaboration.

There wasn't any sort of formal formative assessment coursework that they engaged in, but they did work with peers around these issues. And about 40% of folks participated in the more formal courses where we've labeled this as a former assessment coursework and that was with or without the surrounding mentoring or observation or collaboration as well. Whereas about 10% or 11% actually reported having no formal assessment training to date. Now, all that said…now that within those, there are different types of…obviously, peer mentoring is different than observation. Those are teasing things out, are a little bit tricky in the study. With all that said, however, if you go to the next slide, we were able to group folks given that we had a pretty large sample of teachers and about 10% of them had no exposure at all to look at the

teachers in the study who participated in any formative assessment training could have had some exposure through either informal peer observation, collaboration, or mentoring or formal coursework. Those folks who had that kind of support, they reported using formative assessment practices more frequently during a given week. And it was statistically significant by about 0.15 standard deviations.

Also, they taught students. If you look at their student responses, their students reported more frequent use of self-regulated learning strategies by about 0.18 standard deviations. So there does seem to be a signal in here that there was, the training did have an impact on both practices and students' self-report of the self-regulated learning. The tricky thing was teasing apart which types of training had more impact because we had trouble with that sort of coding, really drawing it apart and making some inferences on that front. But it did look like some exposure to training and support was helpful regarding the use of practices in the classroom and student self-regulated learning.

And so the next slide. So, back to the data rich slides, again, I'm going to talk through this. I wanted folks to see it. So, the table displays the results from the teacher respondents across the three districts whose students also completed the surveys. We're able to link students to teachers. The values in the table, those reflect the correlation. So, basically the strength and consistency between the frequency of the formative assessment practice, that's on the left, and the average number of self-regulated learning strategies. So, that's treating all of them, sort of an index of total number of self-regulated learning strategies that were reported by their students.

As you can see, there were positive associations between student self-regulation and teacher practices. And again, the rows are ranked from sort of highest correlation to lowest. They aren't high, strong correlations in magnitude, but they aren't zero and they are positive. And it's interesting to look at this. The providing structured occasions for students to provide feedback to one another, actually had the strongest positive association with self-regulated learning strategies overall and across the groups, and the second highest positive correlation overall was having students…seeing that students assess their own learning and thinking about next steps in class.

So, those who remembered the first slide, right, remember, and the second slide will remember what were the most frequent strategy employed. So, we're going to get to that as well, but these were the two that had the strongest relationship and here is where I wanted to draw the subgroup differences because they were evident. There were stronger relationships with these practices and student self- regulated learning in elementary classrooms or among elementary teachers and in STEM classrooms, as you can see on the slide. Now, I think we all know that those environments do differ, the norms in those classrooms for peer feedback, for self-assessment, for modeling peer feedback, for thinking like a scientist or having peer critiques might be different. So, it does seem that self-regulated learning relationship performance that's in practice was different in the context, both STEM and non-STEM and elementary and secondary in our study.

And there's some more detail on this in the study as well, that's something to draw out. One thing I'd like to remind folks is the top two rows here. Those were the least frequently employed strategies among teachers that have actually had the strongest positive association with self-regulated learning. I would like to note that again, as I noted earlier, we had about

40% response rates. It doesn't necessarily reflect the full populations of students and teachers in those districts. And we didn't have enough data to really get into the representativeness. And so, folks who didn't respond might've had different responses. As I noted, it tended to be teachers who had some exposure to formative assessment, who are the teachers who responded and the relationships I've talked about are correlational. So, they're not talking, assuming that one thing causes another.

It might be that in a classroom with students who tended to employ a lot of self-regulated learning strategies, it's a lot easier to engage in formative assessment practices. We weren't assuming any direction of the relationship. We're just exploring some more frequent formative assessment practices and with the frequency of self-regulated learning strategies. So, there's limitations but I want to have everyone's…guide everyone's thinking. But again, given the size of the sample and the size of the number of students, a number of teachers we can look at across districts, I think these patterns are really interesting. So, the overall implications from the study are the key takeaways. Thinking back to the self-regulated learning strategies that students employ, they less frequently tend to solicit feedback from their teachers or from peers, and teachers less frequently provided occasions for their students to give feedback to one another.

However, facilitating those practices had the stronger approach, positive associations with self-regulated learning. So, considering moving forward the implications of this or we need to consider ways to maybe more strongly emphasize the facilitation of feedback and self-assessment, and at the same time, these are multi-dimensional constructs. I don't think it takes a lot of strong foundation in order to build strong classroom environment for where effective peer feedback and self-assessment can take place, and I don't want to diminish all the foundational work that needs to happen. I don't think you can get effective peer feedback unless things like firmly understanding the learning goals, success criteria involved, a classroom culture that is sort of embracing feedback and student discourse—those things need to be in place in order for these types of things to actually take place. And I think it's… And as I noted before, the relationships tended to differ in different grades and subject areas.

The why of that is, I think, one of the most interesting parts of this study as sort of thinking about classroom environments in different subject areas or different grade levels. What is the nature of that environment? What is an effective form of assessment? What does effective peer feedback look like in say, a secondary math classroom versus a grade four social studies lesson? So, do practices differ… effective practices might differ in that way to really engender strong self-regulation on their students. And if this were to be studied more systematically, again, these are surveys of folks who selected in to answer them across three districts, but it might be worth looking at this sort of within schoolwide, within a subset of schools. All the teachers in certain schools are engaging and then compare the schoolwide results to one another. Might be a way to look at this more systematically in the future if folks… I can talk more about that in the Q&A about designing studies around this, that might be able to explore these relationships in more detail. And then again, different grade spans in subject areas.

I think we can talk about that in the Q&A, but the nature of these differences—thinking like a scientist, proving a theorem, and having people critique your proof on the board, why STEM might be different. And again, then in elementary classrooms versus secondary classrooms, thinking about how these types of forms of assessment might look different in those different areas around student self-regulation.

So, that's, that's the study. Again, I would encourage folks to download it and read it. It provides a lot more detail and background than I've mentioned—all of our tools and protocols are referenced in there with links. And I'd also think that Margaret's work is a great supplemental or companion to our work that led to it and provides a lot of theoretical justification. Her recent book talks a lot about self-regulation, the language issues that are involved with that. But I think this is a brief sort of 10-minute take on the study, and I think it presents a lot of really rich… by teasing apart the practices and thinking about them in different ways.

I think it provides a lot of fodder for interesting conversations about looking at classroom practice and student work. What students are doing, what teachers are doing in classrooms to promote this sort of student self-regulation, which is, Margaret notes, not only strong for their learning but strong for themselves in life skills as well. I'd be interested in talking more in the Q&A and I think we can shift to that now because I think that's my last slide, but I also acknowledge that folks have been listening for 45 minutes, which is a long time, and we want to have to get this a bit more interactive. So, if folks want to pose questions in chat, I know my colleagues have been tabulating them and organizing them. Questions for Marie, Lenay, Margaret, and myself. They'll be posed now and remember, we'll have another Q&A session at the end. So, thank you. Thank you very much. And I kick it over to Kim or Lori to present some questions that we got.

KIM AUSTIN

Great. Thanks Reino and Marie, Lenay, and Margaret for kicking off this webinar. We do have some questions coming in and feel free to add them to the chat. We will have a second Q&A at the end of the webinar. So, two pauses, two opportunities. I think, Reino, while the study is fresh in our minds and we're kind of digesting the findings, we might start with a question related to this study. Why does it appear that secondary teachers are not modeling self-regulated learning or addressing learning goals? And we might go to that table, Laura, with the shading, so that if people want to revisit those findings.

REINO MAKKONEN

I can speculate. I don't know. I would say, from my understanding, I do think in some of the districts, some of the training and building the skills around formative assessment among teachers was rolled out iteratively in the elementary grades first and then the secondary grades. So, this might've been a timing issue or the teacher skills issue, but I can't say why. I can't really answer that one. I do think I'd like to open it up to other folks about, particularly maybe Margaret, about why the grade-level differences, grade span differences she might've seen in her work and why those manifest.

MARGARET HERITAGE

Yes. Happy to take a stab at that. Basically high school, secondary school teachers are a tough bunch, you know, and I'm talking from my experience now—they're very much focused on content delivery. I have my subject, I want kids to learn my subject, and a lot of the pedagogical practices which are really strong in many high school classrooms—not all but many—are very much delivering instruction as opposed to thinking about a broad range of ways in which students can be engaged in learning. I've seen some remarkable exceptions to this when teachers have decided to embrace formative assessment practices.

Several teachers in Chandler Unified in Arizona are real exemplars of how to do this. But it really, really does mean changing how you think about operating as a teacher in the classroom. And I think many elementary teachers have the bones of formative assessment already and find some of the changes they have to make a little more palatable and easier than secondary colleagues. Now, I don't mean to diminish the secondary colleagues at all, but I do think there's something to be said about the research has pretty clearly indicated that there's a lot of significant changes need to be made in a classroom, how it's organized, and how teaching learning takes place in order for these kinds of practices to take hold.

KIM AUSTIN

Thanks, Reino. Thanks, Margaret. While we're talking about different grade levels and grade spans and ages, we got a question earlier on for Margaret related to the revised definition of formative assessment. And the question is, how well do you think the definition of formative assessment fits in the early learning birth to kindergarten context? Would you change the definition in any way for early learning professionals?

MARGARET HERITAGE

Well, back to kindergarten, that's quite a span. I would change the definition word for word, but I wouldn't change the basic principle of the definition. And I think in for… what's very important and in many respects, early childhood teachers are the most effective formative assessment practitioners. I think it was—early learning people on this call may be able to correct me on this—but I think it was Friedrich Froebel that said, "Watch the child, he will show you the way to go." That's basically the essence of formative assessment. Watch the student, pay attention to the student, and based on what you're seeing, make some decisions about how you engage with the child to move a child forward. Whether it's cognitively, physically, emotionally, all in the interests of supporting that child's development. I don't think it would have disciplinary learning content or anything like that but the essence of the other definition in terms of getting evidence and using evidence to scaffold student learning, move it forward I think is equally applicable in early childhood context.

KIM AUSTIN

Great. Thank you. Let's take a question about the state context. So, for Marie or Lenay, can you share a little bit about how the state has supported this formative assessment work through communities of practice and summits?

MARIE MANCUSO

I'll get started and maybe, Lenay, if you want to add specifically around the… I mentioned that ADE started by building their own internal capacity and their own internal understanding. And I think that created a foundation for the design and sponsorship of the communities of practice. And the communities of practice were really intended to bring practitioners together from across the state to meet on a regular basis. The agenda or the plan always included featured presenters. Margaret presented at several of them and other featured speakers. But the key intention of the community of practice was to feature teachers across the state, their practice, what they were learning. They brought video from their classrooms demonstrating what some of their students were doing as a result of the work in those classrooms around formative assessments so that attendees could actually see what does it look like when students are engaged in formative assessment, and the other feature of the communities of practice were

opportunities for leaders to meet together and address from a leadership standpoint, how you lead and support formative assessment in your building or in your district.

MARIE MANCUSO

And there was a lot of discussion around scale, going deep, and also strategies to spread and scale within your district or within your school. And the communities of practice were open to people who were actively engaged in implementing formative assessment as well as an invitation to those districts who were interested, who maybe weren't implementing yet but wanted the opportunity to learn from other districts who were actually engaged in this work.

KIM AUSTIN

Great. Thank you. That actually provides a segue. We have a few questions about resources, tools, videos. One question about, is there a peer-to-peer feedback protocol or a guide that we can use to establish routines with students so that the entire process of feedback is intentional leading to self-directed learners? We have another question about videos of exemplary teaching practices with formative assessment at secondary, are those available, and also tools for pre-K and K. So, folks are really interested in resources. If anyone on the panel can answer.

REINO MAKKONEN

Yeah. I would say first that the Formative Assessment Rubric Reflection and Observation Protocol, the FARROP, in their peer feedback dimension, talks a lot about what it looks like and gives a lot of materials for how to structure it and how to know if it's working well. They also have a rubric in there on that particular dimension. So, I direct folks to that. There's also a website, I think it's…I think it's Use the FARROP. There's several websites dedicated to the FARROP tool. But I think it's a really powerful tool that gives a lot of supports and scaffolding for doing this work. But I think, ultimately—Margaret can definitely add to that—but I think looking into the FARROP, looking at the structures that are in there is going to be really helpful for folks as a great instrument for this.

MARGARET HERITAGE

Yeah. I agree, Reino. And just to clarify for everybody, the FARROP was actually commissioned by the FAST SCASS. So it's another FAST SCASS product and Caroline Wiley and Christine Lyon from Educational Testing Service actually compiled it. And it has actually gone through a content validation study, quite an extensive one, again funded by the Hewlett Foundation. I think one of the best protocols I've ever come across was used by first, second, and third grade teachers, and this could easily be adapted for older students. This idea of a PQS, which was introduced to the students in very systematic ways and modeled and practiced. First of all, you give a put-up—what's good about the work, what's good about the learning, what's going well? Then you ask a clarifying question, so you're engaging with thinking with your peer, and then the final one is a suggestion: What is a suggestion for improvement? And I think those three steps, particularly like the inclusion of the question, a clarifying question. I mean, those three steps could be adapted in any kind of way for a great range of students.

Some people use two stars and a wish, but I actually liked the inclusion of the question—I've seen that work very effectively with these young students. Off the top of my head, I've included them in various books I've written and then Caroline Wiley, who's a co-author of mine, wants to put anything in the chat box. I know we've included some protocols in our

recent books, but I think that that three-part structure to be adapted across grade levels would be very helpful.

KIM AUSTIN

And Lenay, could you say just a few sentences about the professional learning that teachers were provided? I know that they weren't all provided with the same coaching and sessions, but some received some online learning.

LENAY DUNN

Sure. Right. And it did vary through some formative assessment insights work through WestEd teachers engaged in some opportunities to understand the fundamentals of formative assessment. And some of that was online material supplemented with group conversations, teacher collaborative discussions. So there was… As Reino showed in the study, there was really variation in terms of the amount of professional learning that teachers engaged in. And it was really customized to different sites. And I think that Pam Betten from Sunnyside Unified School District, who's going to talk next, will share some more about what that looks like at their site. Because it definitely did vary but there are some fundamentals that they engaged in.

KIM AUSTIN

Thanks, Lenay. Yes, with that, let's transition to introduce Pam Betten, Chief Academic Officer with Sunnyside School District, who's going to share a little bit more about what this all looks like in your district and schools.

PAM BETTEN

Thank you, Kim. Thank you. First of all, I have to say that the work that we've done in Sunnyside has been just really, really strengthened by the partnerships for many of the people that you see here. It's a great opportunity to tell our story in a little bit more depth. So, let me tell you very briefly about Sunnyside, who we are. We are a district in Tucson, Arizona. We're the second largest district in Tucson, Arizona. Just under 16,000 students. You see who we are—21 schools, we are pre-K through 12th grade unified district. A minority/majority school district, and we serve a lot of families that are in poverty and some extremes really exacerbated by current conditions. So, as we talk about this work and we get a little bit further in, I want to spend just a little bit of time, kind of giving you the context of how we think and why it matters in making decisions and then move quickly through that to just really talk about what this work has been translating to for us over the course of time. So, one, Steve Holmes is our superintendent and he had done some work with the PELP (Public Education Leadership Project coherence) framework in the past. We really kind of modified the PELP framework to really create a coherent framework for us.

This is not just a great graphic that we put up on the walls but we truly… Every time we talk to our own staff teachers, we present, we always keep this at the forefront because it truly is the lens by which we make decisions. It's financial decisions, it's curricular decisions, it's hiring, but it becomes the link because that connecting to the instructional core at the center is really key in this work. When we think about our strategies… So, when you really think about the coherence framework and you look at the strategies you see in there, formative assessment is one of our key strategies that we really, really leverage. Our graduate profile constructs are identified in the middle of that: identity, purpose, and agency are what our graduate profile is

built around. And so, our intent is to really keep very tight coherence, which keeps our messaging clearer, it makes our decisions more sound, and it keeps our students at the center. The equity lens that wraps it is incredibly important for us.

We constantly work to be better but the lens by which we do these things matters. It's important in making sure that each kid gets what they need and providing that opportunity. And it's really our focus on formative assessment that has helped us do that. And so, you heard the courses that were mentioned by WestEd and you'll see on the next slide—the art teachers lovingly call this the faces graphic, but it really pulls out what those guiding principles are. This came from some of the blended coursework that Marie and Lenay talked a little bit about that we had teachers and leaders engage in over the past couple years. What's important about this piece is the interconnectedness of all five of these elements and all five of these principles. We focused on formative assessment as a key strategy, but you cannot disentangle it from all these other principles and parts that are in there. The slide…the definition that we use often is a…folks on the call will look familiar, but one of the reasons that we really keep this in the forefront and, again, this is another one that today we just did, we had a three-hour principals meeting today. And so far the slides you've seen are the slides that they see, every single time we continue to talk through them. This matters because this focuses us on learning.

Does it focus us on teaching first or strategies or assessment? This focuses us on learning. We talk about equity and that equity lens. It's really… How do we give each kid what they need? How do we determine where students are on a learning progression? Our exceptional ed students are English language learners; where students are in that learning progression, it needs to occur in real time. And the work around the formative assessment process has been really, really key for us to really advance that work and get better at it over time. You heard Marie talk a little bit about systemic scale and spread. And so, on the next slide you see, these are elements that come from one of the SAIL courses as well. We've done…I mean, one of the formative assessment courses, we've done a few. So, it will also look familiar but what's important about this, it speaks particular to mirroring the things around learning culture, around learner agency, around learner identity, is mirroring that experience and those structured occasions and opportunities for the adults, for my team with principals, principals with teachers, for then teachers to mirror that work with students.

You see, many of the components and things that you heard Reino talking about built into some of these items that we look for when we're talking about learning culture. So, the next one, we talk about our systemic approach. These are principles or taglines or just kind of our go-to's that we help to move this work forward. And you will hear them from anyone in my department, in the supervision side from our superintendent. He is famous for saying, "There's no hierarchy in learning," and we live by that. It is us learning the formative work. My team worked through those courses at the same time the teachers and the leaders were doing it. We have a principal who always says, "The only way to learn the work is to do the work." And so, that is truly a part of everything that we do. The alignment of my math director, my ELA, my exEd director. All of that has to be tightly woven to these principles of understanding otherwise we create our own issues of mismessaging and miscommunication and how do we want to describe formative assessment and all of those little tentacles that can get away from us as we do this work.

I think what's important here is, this is not training, this is not professional learning, this is not an event for us. This is not an initiative. We are truly committed to this piece of the strategy of

formative assessment to be a part of our DNA. It's not about bright spots, about teachers who can do it in different places. It's about each kid that goes through our system. They have many, many structured occasions to develop agency, to develop these self-regulating behaviors, to identify how do they strengthen their learner identity as they're bringing forward their own identity in this space. That requires that…us to define and determine what are those structures and what are those levers that we're going to lean on? Not going to talk through these but you can see them here. The course that was described as being important. One early lesson that I learned helping to lead this work is, I had to have the leaders in it. This is not… Otherwise I had bright spots. I had classroom teachers in different places who could do but I needed this to be a part of what our kids had and what our kids experience. So, we have put a lot of time and energy.

I mentioned today, every month we meet with our leaders, our principals, our assistant principals, our instructional coaches and we have a regular admin meeting that covers all the logisticals especially in these times. But a second meeting every month is specifically focused to the work around formative assessment, around really those phases articles, student agency, really talking through… We spent three hours today really thinking through, What does elicitation of evidence look like in these spaces that we're currently in and how do we identify learning? What does that look like? How do we go in and remotely see that? And what are our look-fors? How do we communicate that back? The instructional rounds when we were in person, we spent a lot of time in small groups of leaders, really big vulnerable learners, and we just flat walk into rooms. Mark has been with us on some of those as has Lenay and Marie. We just go to each other's schools and we just open classroom doors and we walk in and we notice and we try to make sense of what we're saying around these components. And then we do a lot of wondering.

It's not about solutionizing. It's about taking that practice to a deeper level. The bottom bullet of making the work central to what we do is key. It's key if you are able to truly work on scale and spread; is any curriculum that we select, any program changes or…we just went to inclusion with some of our mid-students. We do it around the lens of the guiding principles that you saw in play here. And so, we have gotten incredibly tight and incredibly picky about what we do. How we bring other pieces in so that we don't put noise in the system that distracts from the learning, from really identifying the learning.

When we think about where we're at now. This is year five for us. In this work it's looked different every single year, we have continued to grow. We did not start out with everybody all in but now all 21 sites, and with those…we have pre-school, our pre-school site is involved as well. And our alternative high school's involved, all of our self-contained special ed are involved. Everybody is in. There are different levels. I can show you implementation from zero to a hundred all the way across.

We do have eight sites currently working on the demo site work. That has really pushed our thinking further, really pushing teachers to identify what are look-fors with their kids. What are look-fors with their colleagues around this work. So we continue to work. We made changes to our teacher and our leader evaluation based on this work. We really try to work to align what are the outside systems that can create that distraction within. We are now in the spring, even during this time, working on changing our grading systems and our policies and even our report cards because from the teachers, they said, "It's really getting hard as I get deeper and deeper into this formative work where it's not a quiz, it's not a Friday quiz. It's not short

cycle, it's really minute to minute, and how do I balance that with what you all want me to put into the grade book," and so, great that it's coming from teachers in that space to really start wrestling and grappling with that.

But I want to talk about now, because usually we do a lot with video—we talk videos, we show videos, we do a lot of video study groups, even in these remote and hybrid type times, but I want to show you just a very handful of quotes that have come from some of our students. These are all from the last quarter of time, but what I want to point you to in just a couple of these couple of minutes left is when we talked, you heard a lot of talk today about feedback, about self-assessment, about the structure of occasions it takes to get those in play. Those are really powerful.

We started out with a lot of structures. We got to a place where we had some rote feedback, like partner A, partner B, but we weren't moving it. And we've adopted this saying that "feedback isn't feedback unless it moves the learning forward." And that means me to principals, that means principals to teachers, that means teachers to students, and that means students to each other. So I just want to, as you look through these, you see in some of these quotes, I look now near the bottom, the 10th grade students when this was in breakout room that I happened to pop in to and student A was responding to the feedback from B originally. I mean, student A was responding. I didn't hear anything bad in it as student B shared their writing piece. But what was interesting to me is student B pushing to say, "Yeah. But what do you think I should write my counterclaim about?" So, it's the feedback is so valued by that other student that they're pushing their partner on their own to have that, to get that. The one in the middle about the fifth grade students.

This was… I actually have a little video clip of this where two fifth grade students are working through an assignment. One is…both are former ELL students. One is a current, one's a former, and they got stuck on this word "bustling." And in a matter of moments they presented screen, shared with each other—as their term is, "search it up." They looked for the word online. They very quickly talked about it, put it back into context. Went back to share their screen on what else they were working on and moved right through it. It wasn't a vocabulary lesson. It wasn't find the definition to this word. It was students showing that they knew where to get resources for and from and they went out and got them to support each other in real time. We're seeing a lot of things on screen right now with students sharing their screens or telling their teacher, as you can see some of them in there, just as I wrap this piece up.

The kindergartener I saw this week got his iPad, and as kindergarteners do this little dizzying thing: "Teacher, teacher, I need to show you. I'm stuck. I'm lost. Can I show you my screen? I want you to see where I'm lost." That was so telling to me that the teacher was providing this space for that to be developed.

So just in closing, this current context is challenging, and these are three of the things that really have…speak to our team that resonate with both my curriculum instruction team here and with our leaders. You have to be intentional about cultivating the learning culture that fosters this. This is not a series of strategies. It's not good best practices. It's not all that. It has to be the development of a learning culture at the district, at the site, and in the classroom level that makes that happen.

The mirroring of that process, this inquiry reflection feedback process for teachers and leaders as well as it is for students in that classroom. And just really this vulnerability piece. These

parts of learning culture that have to do with intellectual rigor, of letting our kids and teachers know they can do hard things. And that is a huge amount to do with what we're seeing even in these crazy times of self-regulated behaviors actually shining in some ways if we just look for that in a little bit deeper way than we had.

So, just really happy to share our experiences. And we are learners in this; we are by no means landed there but just the work makes a difference for our kids. And just last statement I had… Today on a call, I heard a principal say, this was… As I mentioned, we were doing some inclusion of students who had long been self-contained, and they said, "Oh my gosh. I'm so glad we have this work because you see our inclusion students immediately being embraced by that learning culture" and teachers saying, "I didn't even know they were capable of doing that." And so, just really, really a celebration of what the potential is for this work, even in this time. So, just thanks for the opportunity to talk our story.

KIM AUSTIN

Thank you, Pam. And we have a lot of good questions coming in. Folks are really impressed with the work you're doing and are heartened by the quotes that you shared from the students. So, thank you for bringing these practices to life for us. One question is about your current context. You mentioned something about not being able to pop into classrooms. Are you remote, are you hybrid, and related to that, how are teachers keeping formative assessment going in the current context?

PAM BETTEN

We were remote. We began remote in October 19th. That was the beginning of our second quarter. We went to hybrid with those who were interested. We were…about 45% of our kids went hybrid. We were able to maintain that up until Halloween, basically. And just the ability for all of the... As you well know, the quarantining and those pieces, it was harder for staff to stay in. After Thanksgiving we've gone back remote, we will go back hybrid mid-January. So, we've experienced both and have lessons from both that are in that space. And I can't remember the second part of the question.

KIM AUSTIN

What does formative assessment look like in the current context and how have teachers had to shift their practice?

PAM BETTEN

You know, after last spring and we came into the fall because we've been doing this work as a district with all of our leaders. Early on, in about August. We started back in August and in about August the very beginning I had some teachers and some, even a couple of leaders who said, "No. Should we pull back on this? I'm not sure they can handle this. I'm not sure." That lasted for about 10 seconds and we're "Absolutely not. This is the work. This is who we are. This actually is the best thing." I'm so grateful that we have the foundation work to be able to put that into play. And so, it was not pull back but lean in.

And as we gained more confidence leaning in and teachers sort of got into the rhythm of "You got to get through that first, what is going on" space, but as they got through that… Actually, what has happened is their work-around formative has deepened, even though we have some

schools who are deeper in the work and some teachers than others. Even between colleagues, their understanding of these concepts and their ability to truly implement them…not in a way that's just like, "Let's just give feedback or let's have the kids self-assess," but really to move learning forward is really starting to take hold.

KIM AUSTIN

Thank you. Connected to that sort of what things are looking like in classrooms. We had a question earlier in the chat around how teachers can differentiate learning goals with students within the same classroom. When you have differences in behaviors, cognitive demand, student performance levels. That diversity of the classroom. How are teachers managing that?

PAM BETTEN

It's interesting and Margaret could tell some tales about me from the early parts of this work, and I got so hung up on learning targets and goals and all this stuff. So, that's where… But really us… What became very, very clear, and I'm really glad it happened, is that the teachers, especially in a remote setting, they have to be crystal clear on what it is they want that learning chunk to be for that day. And so, this, forcing us to teach remotely really focus teachers on identifying what that learning goal was. Now, most of what we do is they adjust the approach or the progression of learning or identifying what is and keep that learning goal the same. So, what's the key, what's the beauty of formative assessment is it's about where each kid is. And it's about teachers noticing where each student is as a learner on that learning progression and being able to in real time make those instructional moves that are for the learner.

Now, do they of course do some differentiation of assignments and pacing and those pieces? Yes. We do a lot of that as teams and as staff so that when teachers get in to the day to day, to the minute by minute, they're making instructional decisions not based on an assumption, not based on a label, not based on a test score from now a couple of years ago but they're actually making instructional moves based on where that learner is in the moment. And that's the power of what it is. Our ex ed director, if we were to get her on this we could not get her off because she's so excited about finally feels like the connection between special ed, gifted ed teachers, and regular ed teachers is strengthening because of the work that's common around what's the learning, and then how am I making instructional moves underneath that?

KIM AUSTIN

Great. A related question is, are you doing this formative assessment work in all content areas at all grade levels?

PAM BETTEN

Yes we are. No matter who you are, no matter what you teach, no matter what you… I don't care if you are the principal in charge of athletics, you are in it. If you are the PE teacher, if you are directors of ours, everyone is in the work. If you were to go to… Wednesday, I was in one of our video study groups at one of our schools online that they're doing. And it was the art teacher, the art specialist at the elementary school was presenting her video and she was working on peer feedback. That was her piece that she was working on. And she's sharing that same level of conversation. New teachers, teachers that have been here forever. We're all at different places in the work but everyone's involved.

KIM AUSTIN

Thank you. How did you… What were some of your quick wins in establishing that kind of buy-in and everyone on board?

PAM BETTEN

Hm…well, I think there were a couple a-ha's that some teachers had… One, we had to create the structured occasions for teachers to talk about their work. But when we did that teachers would usually identify some of those wins that we would even miss. A lot… One of the early ones that came from teachers…and this is where face-to-face is… As we know, as educators we're often micro-managers. And what I started hearing when we started engaging in some of the… In the video study group and also just in the collaborative group and the communities of practice, teachers would say this, "I didn't even know my kids knew that. I didn't even realize they already knew that. I didn't…" And this is them talking to each other. The more they talked to each other and realized the power and the potential and that this wasn't an initiative, it wasn't about a checklist. I did not let, for the first year of this work… When we walked as leaders, we were not allowed to give, by our own rules, next steps because it became solutionizing and we needed to break a culture of old and create thought partners with teachers in this phase. And so, some of that were in the conversations that teachers had themselves. The quickest win you want to get is be a partner in the learning.

It's not about a guru of this, unless you're Margaret who can be the guru. But if you're in this phase, it is about just noticing and wondering and you're moving your position and positional power comes out of this to a flatness in this space that just talks about learning and that… it's a slow process but I will also tell you, it is relentless. I mean, I had a couple of teachers early on go to the superintendent to say, "Could you please make Pam stop saying the words formative assessment?" And so I did it. I quit saying that. There is a relentless piece to this, but it is…what it is, because it's centered on the kids. And if the conversation stays on the kids and the learning, then it gets less caught up in some of the other arguments that we've had over time.

KIM AUSTIN

Definitely feels like a culture shift, which takes time. You've touched on this a bit, but we have a few questions around support for teachers. Is there ongoing support, formal, informal, as they're learning how to do this?

PAM BETTEN

Yes. And because it is what everything that we do… If it's summer work when we're bringing our new teachers in for pre-service days, we do this basic formative assessment 101. Understanding learning targets, understanding elicitation of evidence. We constantly do that. If it is my math director and she's onboarding a new curriculum, that lens is tightly to that. If they are complex instructors, there's a big piece on that. So, our teachers and our math director are doing a fabulous job of having conversations that include both sets of language, if you will, to really make sure that people understand that this work is seamless to everything that we do. And so, the support is districtwide around that. It is, we've really utilized the coursework that my colleagues were speaking of but it's also us making sure that the principals, when they have professional learning communities, when they pull their staff together, when I bring lead

learners together, we always talk about elements that live in here, it is a journey that is relentless, we differentiate the support, however that needs to be done.

KIM AUSTIN

Thanks, Pam. I think we have time for two more questions. Norman asks at what stage are you in regarding to the gathering of data from student learning and performance across schools?

PAM BETTEN

So, that's a question we often get asked. And I think it depends. I mean, there is… Of course, now this idea of summative data is a bit of a hot mess. And about the time when… Because in year one, was a very small chunk. It is only the last two years where we've had everybody in. And so, at this point in time, it's really hard to track big data in this space but that being said, we do some deeper data dives into looking at… Because we spend so much time in classrooms both remotely popping in and out and also face-to-face, we look closely at the data of teachers where we see a lot more implementation of practice than others.

We also see that in schools, but it's not just for me big test data. It's climate surveys. We have our kids do their own surveys. We talk a lot about what's the qualitative, we look at a lot of video. So we are beginning to see those shifts. Our superintendent is so anxious for some sort of way that we can start to see other metrics when things normalize a little bit to see if we're now… Because it's a slow move from big changes in culture to seeing it in big standardized data. But we have a lot of other metrics and data that we're looking at for level of implementation.

KIM AUSTIN

Thank you. And lastly, we have just about a minute to talk about parents and how they're involved in all of this, and caregivers.

PAM BETTEN

It's been interesting. We're remote because we're in everybody's living room and we're teaching in people's living rooms in this remote world has really opened up some conversations for teachers to have, of explaining why they're asking kids to do things a certain way and not just complete an assignment but to talk to a partner, to give feedback. If I'm five and I'm giving feedback on my iPad, that's opened a window for us and it is our goal as we work through, especially to change grading practices, that we really start to leverage conversations of understanding what this is to our families as we move forward. But in this one case, I think this is going to be a good pandemic win for us as we move forward to really be able to build off what families are seeing when they're on the other side of the screen.

KIM AUSTIN

Thanks, Pam. And thank you to all our presenters for this wonderful presentation and to all of you for joining us with your great questions.