

Infants Make Meaning: Reflective Teaching and Learning with Infants and Toddlers

The 18th Annual Birth to Three Institute

Mary Jane Maguire-Fong: Welcome. Hello. Good afternoon. You've made it this far today. It's always a treat to — get people this far into the conversation the conference, because you're very inspired, and we're hoping to build on that inspiration. My name is Mary Jane Maguire-Fong. I'm here with my long-time colleague.

Margie Perez-Sesser: And I'm Margie Perez-Sesser, and we welcome you, and we also welcome our Livestream audience, who you can't see, but we know they're there.

Mary Jane: So we have, I understand, about 170 people who are participating with us through the Livestreaming, and that's why this is being videotaped. Margie and I have worked together for a long, long time. We first started working with babies and with their families in California's first migrant farm worker infant/toddler centers. There were three infant centers set up in farm worker housing centers throughout the Central Valley of California. I was director of the Dixon Migrant Infant Center. Margie was director of Harney Lane?

Margie: The Patterson.

Mary Jane: Patterson Migrant Infant Center. And neither of us knew what we were doing. This was back in the — Margie's going to hate this because she, I'm sure, doesn't want me dating ourselves, but this was back in the late '60s, early '70s. We worked in those programs for many, many years, and then both of us went on to teach early childhood education within the California Community College System. I currently teach at American River College. Margie has taught at Modesto Community College and Cuesta College.

Margie: So now you know that we're really old. We are — we were one of the directors, when we were really young, of the first infant programs. So when we started in the migrant program, there were only three infant programs in the whole state that was funded through Head Start, and so we've been around awhile. We were so excited when Early Head Start came about and we were able to become involved with Early Head Start. I had Wave One — How many people here were in Wave One for Early Head Start? Okay, I know. There — I know there's still some people who are still in Wave One. And I'm hoping that you'll tell us, those of you who are Livestreamed, if you were Wave One, too, because most of us went through the school of hard knocks. And don't you wish we had all of the kinds of resources that we have now that we didn't have back then? And so today what we're going to be doing is being able to share with you some of our experiences and some of the things that we're still doing now with families and Head Start, Early Head Start.

Mary Jane: Should we find out who's here?

Margie: One of the things we wanted to know is, how many people are still teachers with children that are here? Oh, that is so good. Okay. And how many of you are home-based teachers or family child

care? Okay. Great. And directors? We have directors? Oh, good. And do we also have family advocates? Okay, good. Because we are going to be talking a lot about home-based, and those of you who are also going into the homes and family child care. So we'll make sure you're all included. So what we're going to do today is, I'm going to do the first part. Then Margie's going to do part two, and then we have a very brief third part, which is a wrap-up part. We're going to invite you to practice observing, documenting, and reflecting to plan curriculum, to assess the learning of infants and toddlers, and to engage families. We want to explore with you a very simple framework for preparing curriculum, written curriculum, when you're working with infants and toddlers and their families. And we want to connect the dots with you between what we do with respect to curriculum and what we do with respect to assessment. Because I think those can be two very ponderous parts of being a teacher in a federally funded program is, you have to demonstrate your curriculum and you have to assess learning — how do we know they're learning? And what we're trying to do is to lighten the load. So this session is really intended to look through the frame or Early Head Start regulations and to think reflectively about planning and assessing the learning when we're working with infants and toddlers.

So this first part is really dedicated to, how do infants learn? And how many of you went to the plenary session this morning? You had to get up at 8:00, but boy, that was a rich session with respect to taking a very, very accessible dive into some of the marvelous research coming out of Dr. Patricia Kuhl's lab at the University of Washington. And I'll be referencing some of that material today. So what do we know from research about how infants and toddlers learn? And what you see on the screen right now is the website of Dr. Alison Gopnik. She's a developmental psychologist from the University of California at Berkeley. She actually co-authored, with Dr. Patricia Kuhl and Andrew Meltzoff, whose work you heard about this morning in the plenary, a decade or so ago a book called "The Scientist in the Crib," which you see on the website there. Gopnik's most recent book is called "The Philosophical Baby." So you can see that we have researchers looking at this question as to how infants learn, so what are they finding? And this is a — whoops — this is an image from Alison Gopnik's Web page that I find extremely helpful in answering the question, "How Do Babies Learn?" And she says babies are kind of like lanterns. And if you think about, if I were holding a lantern here in my hand, you would see a light projecting in a 360-degree circle, right? It would go out in all directions simultaneously. That's the way babies relate to the world around them. That's a way of describing their level of consciousness. That narrows with the function of age, and as we age, we become more like a spotlight, which you see in the image on her website. And, you know, that's functional because as we age, as we become adults, it works better for us to be able to focus narrowly on a specific task.

So we have to remember that babies approach the world with different minds than we do, and they have this amazing ability to capture multiple sources of information simultaneously, all in the same moment of time. So let's think about that, and I want you literally to think about that for a second, and if we pose the question, do you agree or disagree with the statement you see on the slide right now, which is, "Six-month-olds can calculate statistics." Hmm. And those of you joining us in our streaming audience, you can type either "agree" or "disagree" into your computer. Just think about that: do you agree or disagree? Okay? Let's do a show of hands. Raise your hand if you agree: babies as young as six months old can calculate statistics — that's kind of, whoa! What? My hunch is those people went to the plenary this morning. [Chuckles] The rest of you, I'm assuming, disagree. That's a pretty tall order. Well, let's go into the lab of — this is going to take us into some research from...

Alison Gopnik: If not for the evolutionary picture of what babies and children are all about, you might expect to see some of this reflected... [Multiple voices speaking at once]

Margie: While she's doing that, if anybody comes in and doesn't want to sit where the little packages are, tell them it's okay. It's something we're going to be doing later with all of you, so it's okay if they sit there. [Multiple voices speaking at once]

Mary Jane: Sorry. Okay. Let's do it again. I had three up simultaneously. Let me get this. "Enter full screen." Okay. [Video begins]

Alison: Here is what a colleague of mine at Berkeley did. What she wanted to do was use this technique to see what babies thought about statistics. Now, a basic statistical idea is the idea of a sample representing a population. Here's how Fei actually tested this with babies — can we see the video? What she did was she showed the babies a box full of Ping-Pong balls. And these are 8-month-old babies. What the babies see is that the box is either mostly red with a few white...

Fei Xu: What is in the box? What's that sound? Look, baby!

Alison: or mostly white with a few red Ping-Pong balls. Now here's what babies see next. They see the experimenter now take a sample out of that box.

Fei: Look at this one.

Alison: All right, so there's one white, one red.

Fei: Some balls. Look at that one. See this one look, baby. Look!

Alison: Okay, so now that makes sense, right, that's what you'd expect? If it's mostly red, then you'd expect to pick out mostly red balls. But now here's the next thing that we can show the babies.

Fei: See this one. Look at those.

Alison: Okay, now, hopefully, you guys will be starting to think, "This looks like it's less than .05 significance. This isn't a random event. That event doesn't make any sense at all. There must be something else that's going on." Well, that's what 8-month-old babies do. So 8-month-old babies will look longer at the second event when you pull mostly white balls out of a mostly red box than if you pull mostly red balls out of a mostly red box. [Video ends]

Mary Jane: Okay, so. So what does this tell us? That they what? That they are... Well, at least they're able to recognize something is amiss when this sample gets pulled out mostly white balls from a primarily bucket of red balls. Whoo! Okay. So this is what is causing people like Dr. Alison Gopnik to suggest that, hmm, yeah, babies seem to have this awareness of quantity and number that starts very early on. So, let's look at another body of research, and this has to do with language, babies and

language. And you heard reference to this this morning if you were at the plenary. This is from a TED Talk by Dr. Patricia Kuhl from the University of Washington, and we're just going to see a couple clips, a couple of minutes' clip from this. And listen to what she says about babies — She calls it "the amazing genius of babies" — about what she says about babies and statistics. [Video Begins]

Patricia Kuhl: So the question is, what's happening during this critical two-month period? This is the critical period for sound development but what's going on up there? So there are two things going on. The first is that the babies are listening intently to us and they're taking statistics as they listen to us talk. They're taking statistics. So listen to two mothers speaking Motherese, the universal language we use when we talk to kids, first in English and then in Japanese.

English Speaker: [Gasp] I love your big blue eyes! So pretty and nice!

[Japanese Speaker speaking Japanese]

Patricia: During the production of speech, when babies listen, what they're doing is taking statistics on the language that they hear. And those distributions grow, and what we've learned is that babies are sensitive to the statistics, and the statistics of Japanese and English are very, very different. English has a lot of R's and L's, the distribution shows. And the distribution of Japanese is totally different, where we see a group of intermediate sounds, which is known as the Japanese R. So babies absorb the statistics of the language and it changes their brains. It changes them from the citizens of the world to the culture-bound listeners that we are. [Video ends]

Mary Jane: So... So are you convinced yet? Babies seem to have this capacity to gather information that's coming to them from the world around them, whether it's object information or language information, and begin to organize it and make sense of it in some systematic way. That's why scientists are saying that babies are like scientists. They have this capacity, they're active learners, they're meaning-making individuals from the moment of birth. So, their encounters with the world around them — with the object world, with the people world — matter. And what they learn becomes a foundation for everything that they're going to learn later in life. So let's try another question: Do you agree or do you disagree here? Six-month-olds can distinguish between actions that help and actions that hinder. You agree? We're all onboard. We're coming onboard on this one. Let's go into a couple of other research labs and I'm giving you links on all these because they're available on YouTube or on the Internet. You can access them when you go back home. This is going to take us to a quick little clip from the National Science Foundation. I'm going to move more slowly on this one because I went too fast last time. There we go. [Video begins] This is from the lab of Dr. Karen Wynn at Yale University.

Man: Babies know when their diaper is clean or dirty or when their tummy is empty or full. Just ask any sleep-deprived parent. But can babies tell when someone is acting good or bad?

Karen Wynn: Babies are oriented towards pro-social individuals. They prefer interacting with a pro-social individual over an anti-social individual.

Man: Psychologist Karen Wynn runs the Yale Infant Cognition Lab. She's studying the roots of morality. This experiment demonstrates how 19-month-old Sarah can distinguish a good puppet from a bad one.

Karen: We have a puppet who's trying to open a box. He sees a nice toy inside of it, and it's a Plexiglas box that he's just trying to open, and he can't lift that lid. Then another puppet comes along and helps him open the lid so that he can get to the toy inside. So that's the helpful puppet. Next he's again trying to open up the box, and a different puppet comes along and jumps on top of the box lid, slamming it shut, and dashing his hopes of getting in there.

Man: Sarah watches the show several times and afterwards she'll have to choose which puppet to take a treat away from and to give to a new stuffed animal.

Karen: Toddlers are pretty clear in their choice. They will take the treat from the cad who was rude enough to slam the lid shut on the puppet.

Woman: That one? Good job!

Man: Addison is just three months old. In another experiment, she watches striped puppet play ball with green shirt puppet. When they're done, green shirt returns the ball. But when striped puppet plays with red shirt, red just takes the ball. After the show, Addison spends more time paying attention to the good puppet. We weren't necessarily expecting to find as strong of responses as we have found at such young ages.

Man: Wynn says... [Video ends]

Mary Jane: Okay. Again, that is available on YouTube, compliments of the National Science Foundation. So there's this whole area of study beginning to look at how are babies making sense of other people, the minds of other people. And that's how we need to be aware of this with respect to how the experiences that we offer baby influence how they make sense of people, make sense of others. I have one quick little last study to show you. This is from the lab of Dr. Michael Tomasello at the Max Planck Institute. [Video begins]

Man: Oh. Hmm. Oh. [Laughter] Oh!

Mary Jane: This guy is trying to hang some clothes on a clothesline and he accidentally drops a clothespin. [Baby coos]

Man: Ahh! [Video ends] [Laughter]

Mary Jane: See, you guys get this stuff. Because you see it every day, and you know it's happening. But, we have a big wide world of people out there to convince that babies are a lot smarter than we ever thought and deserve to be treated with more respect than we ever thought, as do their families, who are their primary providers of care. So, if we go with this image, that infants are like scientists — they explore, they hypothesize: "if I do this, I think that will happen; if somebody looks like this, I think

they're going to react to me in this way." They're forming hypotheses, they're forming theories about the world just like scientists. Dr. Carlina Rinaldi, from the schools in Reggio Emilia, provides a wonderful quote to help us understand our role if we're working with these infants as scientists. She says, "We as teachers are asked by children to see them as scientists or philosophers, searching to understand something, to draw out a meaning. We are asked to be the child's traveling companion in this search for meaning." That, to me, is the most precious job description you could ever provide me, a traveling companion for the child in search of meaning. She goes on to say, "We are also asked to respect the meanings that children produce, the explanatory theories they develop, and their attempts to find and give answers. And when we honor the children this way, the children reveal their thinking to us." If you're interested in hearing more from Dr. Carlina Rinaldi, this is from an article in a book called "Twenty Concepts for Care" published by WestEd, who brings us the program for infant/toddler care. So she has an article in that book, and this is an excerpt from that article. — The co-author of that book, Dr. Ronald Lally, encourages us to think of ourselves as teachers who are researchers because we are moving from not knowing — we don't know what the child is thinking, what the infant or toddler is thinking — and it's our job to try to find out how they are making meaning and then ask ourselves, and then how do we support them in this endeavor? How do children reveal their thinking to us? And then what do we do to support them in their research, when you think about it. So I like to think of the relationships that we form with babies and with their families as a triangle of relationships.

So you see this triangle image on the screen right now. And there's some things written around that triangle that I think are important. The three corners of the triangle, obviously. The baby, the family and the teacher or the family support worker, whoever the staff person is who's working. I'm just going to — We're just using the generic word "teacher" here. There are three conditions for this triangle to be strong. Each needs to care about the other. Each learns from the other. And each is open to a sense of wonder. So we know children have that. But as teachers, we need to be open to a sense of wonder. And you're going to find, as some of what Margie is going to share with us, how do we open that sense of wonder with families? So let's invite an infant into our presence. And I'm wondering, is there any way we could drop this back light, of bank of light, so that we can see the screen a little better over here? Or can you see the screen okay? It's not too light? Okay. It would be better if the light was off, is what I'm wondering about. And I don't know if that will compromise the — what's going on here.

You're going to meet Severyn. Severyn is six months old. This is a home video. It's not nearly as lovely as what you saw earlier. I did this. [Video begins] This is just about two minutes. Don't look down. [Baby cooing] [Video ends] Okay, so now we're going to practice what we're calling "reflective practice" here. We want you to introduce yourself to — let me get out of this — to someone you're sitting nearby. And we'd like you to have a very brief conversation with your talk partner. It will be only for a couple of minutes, so make sure you give each person a chance to share some thoughts. We want you to focus very specifically on these two questions: What did you notice and how did he reveal to you his thinking? Okay? So I have a little sound maker that you can listen for in about two minutes. And we'll find out what you came up with.

[Participants chatting]

Margie: And those of you who are our partners that are listening in, you can do the same and type in your answer. [Bell jingling]

Mary Jane: You guys are wonderful participants. You listened for that. That was way too short. I can tell, that was a growing, dynamic conversation. I feel very guilty stopping you. However, let's do a quick little, what I call a "popcorn." Would some of you quickly, you know, raise your hand and just share what you noticed and how is he revealing his thinking? [Woman speaking off-mic] We're going to get the mic on you, Shantia. Thank you.

Shantia: He was very observant at the object. For the first object he picked up, he turned it around, he twisted it several ways, he put it in the air, looked at it, and then once he felt that he looked at it long enough, he set it down. And then he found the other object that looked just the same, but he wanted to make sure, it seems like, that it was the same as that one so he started observing that as well, and then put it next to the first one that he observed to say, "Okay, well this does kind of look the same, but let me check it out a little more just to make sure." So that's kind of what we noticed and how he kind of revealed to us that, "Hey, well, let me see: this is what I'm thinking. They look alike, so let's check it out to see."

Mary Jane: You gave a very articulate description of what you noticed. Thank you. That was great. Does anyone else have anything to share? That was fairly detailed. But there could easily be other things that you notice that you would like to add to the — to our documentation here, our interpretation of what we saw. Anyone else? No? Well, we have someone else down here. Yeah. We're going to return periodically to think more about what Severyn is revealing in terms of his thinking, so you'll have more chance.

Woman: With our group, we discussed that, one thing that he revealed was definitely that he knew what he wanted to play with. Because there were different — there were other toys around him, but he really was intentional about that particular thing, so he wasn't just playing to be playing, he knew what he wanted to play with.

Mary Jane: I'll give you a little background. — he's never really seen that before. I was visiting for the first time. This is a colleague's grandson. And he never — that was a soap dish. And you'll find later that we're wanting to explore some other definitions of this phenomenon, things called toys. So it was quite intentional. And I want to point out something, and this is a good lead-in. I'm going to show you some still shots just to kind of trace what he did here. He — as you describe, Shantia — that he definitely performed that lantern function and captured a lot of information about that. And then he flings it to the side, doesn't really see where it goes. He's only 6 months old. Those of you who've studied child development, object permanence really hasn't kicked in, I guess. And he could care less about it for a second, it appears. We'll find out. Over to his left are two soap dishes: one is a great big, white, plastic one, a different structure, and there's one identical to the one he just played with. Well, he has to tuck his hand underneath the large soap dish in order to get that smaller one, so he was very intentional about going for that one, which was interesting. And then, as you explained, he seems to notice their identity.

So, if we think about this play, it's going to give us some room for constructing and understanding of what we would do next to support this child — his name is Severyn — in furthering his research. But we need to kind of ask ourselves, what was the thinking that he revealed to us? Did you see any concepts? Can you describe any concepts that he is showing evidence of here? Yes. [Laughter] Ooh, we're working with a well-trained group of early childhood professionals here. Yes, so he's showing us some understanding of some foundational math concepts of identity. Any other descriptors you would use? Similarity. Comparing. Classification is a concept. Pairing. We're getting into the area of number, equality, and, "I have one here, now I have another, I'm making two."

So everything that has just been described here are foundational concepts for math and science, okay? So, he's probably — we could talk about fine motor skills that he's providing evidence for. If I were to say, with respect to his attitude or his approach to learning, which you referenced here, did you see any evidence of his approach to learning? [Participants discussing] He's investigating, he's curious. He persisted. Yeah. He was very generous in the evidence he provided us when you think about it with respect to approach to learning. And that kind of leads us to his social-emotional disposition. Did you see any evidence of his social-emotional disposition? He was happy. Could you say that again?

Somebody said something over here. Yes? [Woman speaking off-mic] Yeah. If we had time to repeat and listen to this again, you would actually see changes in his emotion and his vocalizations in response to his social-emotional disposition. Do any of these terms sound familiar? Yeah, okay. [Laughter] So what we're doing here is we're gathering evidence — what I call the data — to meet the Early Head Start readiness goals, which are listed here. Language and literacy — we didn't really hear a lot of language, but, you know, in other clips we might. Cognition, general knowledge, approaches to learning, physical development and health, social and emotional development. So, if we take seriously this approach to thinking about curriculum in which we are observing, documenting, and interpreting what children are doing within play and interactions, that will lead us — in other words, the children will lead us — to meaningful curriculum. But we need to be mindful of what they're doing. We need to slow down, we need to notice what children are doing. And only when we do that will they reveal their thinking to us. And when that happens, that's where we build a foundation for developing curriculum plans. Curriculum plans should come from the children and families and the teachers who are forming that triangle of relationships. They shouldn't come from boxes or books or shelves or be only things, activities that you've put out on tables. So we're going to talk about a very simple way of thinking about reflective planning, in which we're going to observe and reflect, just like what you just did.

You're already practicing this approach. When you observe and reflect, you ask, "What is the child doing? What does the child appear to be trying to figure out? What appears to be his hypotheses? If I do this, I think that will happen or I think this is the same or that's different than the other. Then we document, and documenting just, in my mind, it just means holding in memory some way. Sometimes it's a written note, sometimes it's a photograph, sometimes it's a video clip. And then that documentation is something we can share later with others, whether it's our co-workers, whether it's the children's families. And when we share it later with others, we interpret it, we discuss it, we reflect together, and that is where we ask the question, "How is the child revealing his thinking and how does this inform what we do next? What is our curriculum?" And we don't know where that is going to take us, necessarily.

Carlina Rinaldi, in a lovely video from the California Department of Education, she's interviewed in that video, and these are her words. Carlina Rinaldi's from the schools in Reggio Emilia. She says, "What kind of context, what kind of possibility can you offer the children for the next step and the next step, not because you know the next step but because you want to offer a possibility for children to go deeper and deeper in their research..." So, if we can think about curriculum planning as a project, as a research project, in that we're going to pose a question, a simple question: What might happen if we offer infants this? What might happen if — when they explore something new that we add to the play space? What might happen if we invite them to do something new during the mealtime ritual? That can become our curriculum. So a curriculum plan can be very simple if we think about it this way. It's a planning question, and I'm using the example with Severyn here and just created a little simple way to think about the way the written plan might look. "What will the infants do in response to soap dishes added to the collection of familiar toys?" That's our planning question, okay? That's what goes on our "lesson plan." And there's plenty of room left for us to collect our observations. And then later, when we're thinking, "Ooh, he showed us his awareness of quantity," you know, I'm going to write that down there.

So, if we look at what this might look like after writing the observations and after reflecting, these are the kind of things that you would see written onto the plan. I'm not going to read through each item here because that's really not the point. The point is, I want you to see how it transforms our image of thinking about a "curriculum plan." A curriculum plan is not just the name of the activity we intend to do in the time slot during the day we intend to do it in. A curriculum plan that's going to hold evidence of how children reveal their thinking has to reserve some space for us to actually hold that evidence. And so I'm just encouraging you to think a little bit differently about how we might structure our written plans. So, if we were to think about Severyn and what he revealed to us, in that curriculum plan, he's actually giving us the data we want to demonstrate the concepts and skills and dispositions and approaches to learning that we are hoping to achieve as outcomes as school readiness goals. So, if we think differently about how we do our curriculum planning, it can actually help to generate our assessment tools, our assessment material.

Next you're going to see a series of photographs, because Margie and I want to explore with you an expanded definition of "curriculum," that when we're working with infants and toddlers, curriculum is more than an activity. Curriculum is what we put in the play spaces. Curriculum is how we invite the infants and toddlers to be active participants in the everyday routines of care. And curriculum is — are — the conversations and the interactions we have with them throughout the day. So I want you to just sit back and just notice what you see in this series of slides taken from infant/toddler centers, inside and outside. There's a little live beetle inside that bug catcher just so that — And those are little plastic beetles on top of the branch cuttings. Those are fresh rose petals. I think it's hard to really catch all the detail with the lighting.

So I'd like to just have a few people make a few comments. What did you notice in that series? What struck you? There's just many, many things that you could have noticed, but I would like to pull together a few threads with your participation. What did you notice in that series? [Woman speaking off-mic] That in some of the play areas... Mm-hmm.

Woman: That in some of the play areas, a book was also attached to it.

Mary Jane: Mm-hmm. So in some of the play areas, there was a book —

Woman: Accompanying it.

Mary Jane: Accompany the materials that resonated in some way with those materials. Okay? Mm-hmm. Go ahead and start talking and I'll repeat. Okay.

Woman: I think that the teachers were intentional about what they had out.

Mary Jane: Okay. What told you that? For example. Give us an example.

Woman: Well, the book about kittens with the kittens. The freight train book with the train track. The different size containers with the different size lids. The different size colanders with the different size bowls. Just the way it was presented, it was intentional to be together.

Mary Jane: I knew if I threw that out there, that you guys would construct the key points of this session with me. Because that is indeed what we're talking about here, is that the teachers have been very intentional about putting materials into the play space in a way that's going to prompt possibilities — we don't know for sure that they're going to do this — but it's going to prompt possibilities for children to connect one idea to another. And that's how you construct more complex ideas. And children have this amazing capacity to make meaning of the world around them, but they rely on us to put things in their paths that they can use to generate that level of complexity, you know, those concepts that get deeper and deeper. So those connections, how we just put material into the play space that is quite possibly going to create connections in the mind of these children that may not have been there before. We don't have to teach them how to do that, because what the neuroscience, the brain science is telling us to build new connections in the brain, those new fibers that we saw illustrated in the slide this morning in the plenary, okay? But they need material to work with, so how do we put the material into the play spaces? Anything else you notice about that series of photos? You're right by the mic. Perfect.

Woman: I just noticed that they used a lot of real-life tools. Like it wasn't a bunch of toys or whatnot. It was actually items that we would use in a household and stuff like that.

Mary Jane: And you're going to have a chance to explore that with us because one of the things that I think we can do more of in our early childhood programs is to think beyond the plastic and think beyond the toys that we buy from educational catalogs and to bring in more natural materials from our community that surrounds us, that changes with the seasons, and to think of safe ways that we can make those available for infants and toddlers to explore. And the other thing that you point out is, a lot of those things that you saw in the play spaces are what I would call ordinary materials. They're just the everyday things that you might find in the home or you might collect up as part of recyclables. They have an amazing potential for children to construct concepts of number, of spatial relations, of causality, of classification, et cetera.

So, let's think about how this would look on a planning form, then. If you're thinking about, "It matters what I put in the play space, and if I'm intentional about what I put in the play space, how do I put that on a planning form?" it's as simple as this. Same questions: the planning question might be, "What play and conversation will these books and related materials prompt when toddlers find them in the play space?" Then there's space for the observations. There's space for photos. If you're doing this documentation on a computer, you can just pop those in there if you wanted. And then there's a space for reflections. Now let's look at the second context for curriculum. The second context for curriculum are all of those caregiving routines that engage us throughout the day when we're working with infants and toddlers. How do we invite infants and toddlers to be active participants in the mealtime routine? How do we intentionally structure what can be the most chaotic period of the day in an infant/toddler center — the mealtimes? Especially with toddlers.

And then you transition to the second most chaotic time: tooth brushing and hand washing and getting ready to go to nap. How do we step back from that and say, "Whoa, how do we invite them to be active participants in this?" And when you do that, they love it, and it makes your life easier, as a teacher or at home, as a parent. Because they are actually taking over some of those steps in the process. How do we do that during diapering? How do we do that during the napping routine? This is the center from the program from Pistoia, Italy, and they have these lovely little bags. And children would put their clothes or their socks or shoes or whatever in the bag and each child had a little icon that was his name and the child would hang it up on a little hook before they went into the nap room. How do we think about the arrivals and the departures, a very tender time of day that can be hard for many children? How do we think of that as a time to invite infants and toddlers to be active participants? This is a little pretend sign-in area that we have in each of our toddler and preschool rooms that is not necessarily intended to teach writing, but it has the indirect effect of turning them into writers in their own way. How do we think about all of the routines of the day? And with toddlers, consider something like a helper chart that would invite active participation in many parts of the day. And if we were to put this on a planning form, the same thing. We have a planning question: "How will the toddlers respond when invited to use pitchers to pour milk?" So as we modify, as we embroider the daily rituals of the day with opportunities to invite infants or toddlers to engage in new ways with the experience, put that on a planning form and that becomes part of the curriculum.

Here's an example of what happens when we invite toddlers to sign in adjacent to where their families are signing in. What will they do? And this leads to the third context for curriculum, which are the conversations and interactions that we have throughout the day. That can be as intentional as what we put in the play spaces. What we do around story reading, what we do around activities, how we engage the infants and toddlers in conversation is part of the curriculum. That's the easy part; that's the part we tend to think about. But what about moments of sadness and separation? How often do we put that on a curriculum planning form and say, "This is the child's curriculum"? And for children who are entering a program for the very first time, that is their curriculum. You'll never get to any other parts of their thinking until you get through that sadness at separation. That becomes the curriculum. So I'll have an example of what that looks like on a planning form in a second.

This is a little boy who was sad on seeing his primary care teacher leave at the end of her shift at 3:00. And he was crying for hours after that, until his family came. And so the teachers took a photograph,

laminated it. He got to do a little scribble sign on it, and then he carried that around for weeks and weeks afterwards, after his teacher left. That was the curriculum. Guidance and discipline. How do we think about handling difficult moments like biting and sharing and what we would consider the house rules, right? How do we handle that as curriculum and how do we put that on a planning form? Because those interactions and conversations are equally valid as curriculum.

So here's what a planning form might look like if we were dealing with a biter, or a group of children who were tending to bite. What will the toddlers do when we start responding to a bite or aggression with phrases like, "I can tell you are angry because he won't give you that truck, but it's not ok for you to bite. Biting hurts people. Tell him, 'I want that truck.'" So that's our intentional way of responding in a consistent way when we're experiencing children who've learned how to keep safe by biting.

Okay. So... With that, I'd like to transition to Margie, because our intent in doing this workshop is to discuss how do you do this not only in a center-based program but then how do we invite families to think reflectively about these issues when we're working directly with families in the home or we're doing home visits if we're working in center-based programs?

Margie: Thank you, Janie. The audience that we have that is virtual, we will now also have you think about some of these things that I'm going to be asking the live audience. And it's about working with parents. And how many of you go into the families' homes? Yes. Do you feel like you learn so much when you go into the families' homes? One of the things that we want to do is to talk to you about one of the big things that are affecting our families is a lot of stress. How many of you are seeing that with families? And those of you who are virtual can write it in, that you're seeing a lot of stress. And one of the things that happens is that a lot of them are getting overwhelmed about the things that they think that they should have for the families. So, one of these things is, being bombarded by the toys, by the media kinds of equipment that they think that their children should have. Have some of you been feeling that the parents feel that they should have some of these expensive kind of computerized things for children? Are some of you seeing it? Raise your hand if you think... Yes. Because one of the things that we do know is that parents want to do the best for their children. And... this thing is not working. Oh, did it move over?

One of the things that we found out is that, when parents go to the store, or when they're — How many of you have seen this also at baby showers, that they get told, "Oh, you need to have this for your baby"? And a lot of times, when we think about all the influences that our families have — sometimes it could be the media, sometimes it's well-meaning in-laws, is it not? Yes. Sometimes it's well-meaning friends. My older sister says that we have to get computer technology in with those children early. How many of you have heard those kinds of things? Or they're saying, "Oh, well, my baby had this da-da-da-da, and, you know, they just loved it!" Well, yeah, sometimes they are just kind of loving some of the things that they can have, but when we think about it, what else do babies like? Would you like it if you gave them candy? They would like that, too. But if we think about, you go — just happens to be a major department store that I won't say that's in the baby section. But you walk into those places — how many of you have ever walked into where the baby section is and seen all this and just feel overwhelmed yourself? Do you? It is very overwhelming.

When you think about how parents feel when they walk in and see the educational part for infants and toddlers. And what about if I can't afford those things? How does that feel for families thinking, "I should be having these for my family"? "My infant should be having the Head Start with this media equipment. My children should have all of these things." Well, one of the things that we do know... Okay. If we want to engage families — which, that's our Early Head Start goal is to engage the families — is that we need to help them. And by doing a reflective dialogue with the families — with the mom and dad, with the in-laws if they're there — about what is really meaningful experiences for our babies. So, looking at the picture, those of you who are virtual right now might be looking at this. What kinds of ways would some of these materials that you see up on the screen right now might they attract an infant? And anybody here, live? [Woman speaking off-mic] She said patterns, colors, textures. Shapes. Okay, who all know what this is that's in the picture? Yes, those are rollers I found at a yard sale. Believe it or not, somebody still had the rollers. And then I also found, those other things. Does anybody know what those are? What? Yes. They're fabric squares from some store that let them go. The lady still charged me for them, but... [Laughter]

How many of you like to yard-sale? Oh, my goodness. If you tell the parents where the yard sales, where the children are, where they're going to have children's things, they can find a lot of high quality things to interact with. And I'm not just going to say toys, because I found lots of things at estate sales, where they have utensils and all the kinds of things that babies love to interact with. So, if we're going to assist our families with finding those kinds of things that are alternatives to the media kinds of things that they really don't need to be spending their money on... I was at the other workshop before this. How many of you were in the workshop before this, where they were talking about saving money? Families have a hard time with their budgets. Why should they be spending their hard-earned money on these kinds of things that they don't need? So we want to show them where can they go to provide those resources. Many of you have communities where they have resource libraries. Some of you may have places where they have consignment shops.

How many people have consignment shops for infants and toddlers here? In your community. Those are so wonderful. Because sometimes those kinds of things that are really expensive for families can be bought very inexpensively because they're used. And because they're going through these kinds of different phases so fast, they don't use them very much. And sometimes I've gone there to some of the consignment shops, and they're like brand-new. They still have their tags on. So we want to be able to have parents be aware of what kinds of things that they can get that they don't have to spend money. And those of us that are teachers in the home, home-based teachers, and teachers that are going to the home, can point these things out that they can have as resources for families instead of going and buying these kinds of things. How many of you have recycled materials, a place where teachers can go? Are there places? So those are other places that sometimes parents may not know about it. Teachers usually know about these recyclable places, but sometimes parents don't know about that.

One of the things is, when we're looking at those kinds of things that we're choosing in our programs, are they the kinds of things that people are using in their homes? And so what kinds of things are reflecting the culture, the families that we're serving? Some families go to the "re-mate". Some people are going to the farmer's market. Some communities — Do we have any communities here that are represented where you can't have a bag unless you pay for it, so you have to bring a bag? Is there

anybody in here? If you're from Washington or California, a lot of us are experiencing that. So everywhere you go, you'll see families are taking their "bolsas", their bags with them, so that they can have that with them when they go. And you see in this particular center they had a whole — in their dress-up corner, they had a whole little basket full of bags for their children. One of the things that we want to look at is those kinds of articles that might be reflective of the families, and a lot of times I found those kinds of things in thrift stores, and I found them very inexpensively. Now, these particular bowls that you see, I actually saw them in a department store and they were quite expensive. But I saw them in a thrift store and I got them for under a dollar. We also want to think about what kinds of materials are we helping parents to see that can encourage imagination? And sometimes in our center-based programs we're buying things that we really don't need to have because then parents are thinking, "Well, we need to have those, too." So I'm talking about, like for instance in the dramatic play area, you know, where you have the fake food. How many of you have ever thought that that fake food — just raise your hand if you think it does not look like real food, the fake food.

I mean, have you seen those little plastic tacos? Have you ever really seen a taco that looks like that? I mean, really! So we want to think about how you use your imagination to be the food. Those little things that you see right there, those are little wood blocks that I've used with children. They can be anything: they could be the taco, they could be the pizza, but they've also been the money. There are lots of different things, and what they are is just kind of a cut-out that was out of a piece of wood that they actually used the other part and that was the part that they dumped. This particular child lives in an environment — Actually, she's one of my girlfriends' grandchild. I happen to live in California on the central coast, and so in her environment is seashells. And so her grandma has these baskets of seashells, driftwood, those kinds of things, and I know some of you are thinking, "Oh, my gosh, is that a sharp stick?" Well, she does look for the sticks that are kind of very tapered-off, but she's also supervising them. They're not like she's just being there and not seeing them. But when we went to Reggio — Janie and I have been to Reggio twice now. I think you've been three times. I've been twice. But one of the things that we noticed there is they have a lot of natural materials there that we often didn't use because when we first were coming there, we were thinking, "Oh, my gosh, can you sterilize this? You know, is it going to meet our director's standards for cleanliness?" I will tell you I have went to the beach close to where I live and did get drift wood. And then I did take them and I did wash them and I did bleach them, and then I put them out for a week to dry. I think they're pretty clean now. But, you know, we can do those things.

How many of you remember playing with sticks when you were children? And they're learning tools. They are learning tools. These kind of learning tools are open-ended that can be used in so many ways. Thinking about, what can you do with rocks? Thinking about, what can you do with big stones? One of the things I do want to say that I have done this, and so you also all know I had it — I don't know what I did with it now — the toilet roll thing so that you can put the rock through to make sure it's not one that's too small that they could swallow and choke on. These sticks I happened to — are ones that I collected myself, but as they're arranged, are you thinking in your head right now what kind of concepts could be learned through those, from those? From those expensive sticks. So, what we're going to do right now — And some of you didn't want to sit by those chairs that had a bag under them, but what we're going to do is have you think right now by actually interacting with the bags that are under the

chairs that are in the beginning of a row. So, the lady right there. And there are some natural materials. Those of you who are on the virtual audience,

I'm going to be showing you some other things that are open-ended, some of these things that, those of you that are virtually watching this, are in some of the bags that they're looking at right now. So, I want you to pass the bags around, those of you that are in the real audience here today, to look at those things, pass them to your neighbor, and think about what kinds of things are there that you can use in multiple ways that would be learning concepts that you would be sharing with families. Take them all out, hold them. Don't just peer at them. We want you to actually experience, with your hands and your eyes, everything that's in that bag at the end of your aisle. And some of you have things that smell in their bag.

[Participants discussing] [Bell jingling]

Margie: Oh, it did work. Okay, so what we're going to ask you to do is to come up to the mic and share with us what kinds of possibilities did you see with the open-ended materials that were in your bags? And you can also share and tell us what was in your bag. Okay, so somebody would like to come up here. Oh, thank you.

Woman: Some of the items that we had in our bag, specifically, were like rocks and seashells. They had different sizes, different weights, different textures, and I think more so is the textures that the children could personally relate to, because they're trying to live within the world that is around them, and they're trying to absorb that back into them. And so, if we're able to provide that in the classroom, we're able to give different enriched curriculum that you're speaking of, such as, you know, science, you can do math, you can do sensory related, and that can just tie in to a lot of things.

Margie: So many concepts. Somebody else have another bag that had different things in it?

Mary Jane: I just wanted to say, you know, there's a very big — Please come to the mic, as you're coming to the mic, the next person. I just was filling in with something. But I want to point out that science, technology, math, engineering — that's a big area of academic focus right now. And this is where it begins. Physics begins with what you're describing. You know, this is heavy, this is light. This rolls, this does not roll.

Margie: Thank you. Somebody's going to share. She has the bag that I also used because we can't have bags where I live, so we have to bring our bag, so that's my own bag there, so thank you for bringing that and sharing.

Woman: My bag has measuring cups in it.

Margie: You can show.

Woman: Oh, okay. Some measuring cups. It has different texture fabric squares, or rectangles. And there's a little box with a larger scarf in it. And there's — I use this with a rice cooker at home. So I think

it's like a little paddle. But I was saying, maybe they could use it in dramatic play area. These squares are different textures. So maybe you could put those in something to do with sensory because they feel different. For the scooping utensils, they might like that in the sand and water play area, you know, to deal with weight maybe and volume and things like that.

Mary Jane: Do you notice anything about the color, the colors that you're holding in your hand right now?

Woman: They're green and natural. They're similar, yeah.

Mary Jane: One of the things we struggle with with infants and toddlers is art. Right? Is because, how many — What kind of art media can you put out for them to experience in a way that's safe and not chaotic? And so you kind of have to roll back time and think, where does your meaning-making about color begin? And what would happen if a child has a chance to explore just a bag full of green things? Is that not art? That's where your understanding of color begins. And it's not messy. It's not like wet green paint, right? But yet it's art. So I think we need to kind of rethink our understanding of how we think about learning about art and art media. And so you have the green bag!

Margie: Thank you. Do we have somebody else? How many of you — look in your bag right now and see if you have an envelope that has a photograph in it. Do you see that?

Woman: I didn't bring the whole bag. I think I have the red bag.

Margie: Good, okay.

Woman: Which was really lovely, with lots of different opportunities, all different kinds of senses. At first, when I opened the envelope and I took it out, I thought, wow, we're creating little interior designers, you know, just organizing and grouping everything. And then there were these beautiful fabrics and they're so full of texture, and what I was really fascinated by is that most of them are the same on both sides. And then we come to this one. And it's totally different on the other side. And it reminded me of one of the videos that we saw where you couldn't have predicted what this looked like on one side and the other, and I thought of how inviting that would be. Both of us kind of got stuck on this one, the same way an infant would, and I thought, things that we can predict and things we can't predict. So lots of opportunities for that. It was really lovely.

Margie: Yes, thank you, and thank all of you for coming up and sharing. So what if we brought, instead of toys when we go for the home visit, these kinds of things that didn't cost a thing? Everything that you have in those bags, I either found them or they were under a dollar. Including the little cups that you brought up with the measuring cups. I bought those at the Dollar Store. And how many of you know that when you bought an expensive toy, the baby really liked the box? [Laughter] People go crazy at Christmastime when that happens. It's like, "Oh, I spent all this money, and they keep playing with the box." So, when we think about using the recycled materials, what opportunity it is for us to share with families all the kind of deep, important learning that's happening from these things that are no cost. How many of you know what that second red and black plastic... Folger's coffee, yes. Red and black,

took the label off. And those are the measuring spoons that she just had right now. So, if you're thinking about how that happens and you have that visit with families — And sometimes it's not at home; sometimes it could be still in the center where you see the child that's drumming. And so the child did drum on this Folger's can. But then what you have is an opportunity to talk to the families about, what do you think the child is thinking? So what do you see happening when you have the child do this, and then all of the sudden — how many of you have seen them — they're doing this and then they go... And for those of you who are virtual, what I was doing was, then they look at their hand like, "Did I do that? Did I make that happen?" And so a lot of times, those of you who are teachers will see that the child is not sure and some of you will go over and go like that. Again, how many of you have done that? I can see that look. "I've done that," because yes, you did, you made that happen. That wasn't just a happenstance, you made that happen. This particular center actually is where I used to teach, is our lab school, and that teacher put out water bottles with colored water in the fence.

And what we always ask teachers is, when children are discovering those kinds of things, what is your observation, what do you see, what are they learning? So your reflection is really important after you're observing this. So this particular teacher I talked to last week, and what she said, what she noticed was that the children, the toddlers were coming over and taking the bottles, and what were they doing? They were trying to stick them into the fence holes. So then she took it one step further. She got her husband to get her a piece of plywood and make holes the same size as those bottles. And she was going to send me a picture and I guess she forgot, but what she did was she has that outside now, and they stick the bottles into the holes, to drop them out on the other side. Go ahead. Oh, could we have a mic for her? [Woman speaking off-mic]

Woman: We have a classroom in my building that took colored water bottles and put them in the dramatic play. And they put "drink." One's red. They took them and they made red, orange, and white. And when the kids go there, they pick up the white one, they say, "This is my milk."

Margie: Oh, yeah!

Woman: Or "This is my grape juice." Or "This is my orange juice." So that works very well.

Margie: That's a really great idea, and so what you're seeing is that the children are thinking, they're reflecting, and they're developing these ideas that we didn't plan for them. One of these things that you can do also is involving the family, and we talk about engaging the family and talking about it, but also about engaging them with photo blocks. These are — it's really hard to see in this picture, especially those are you that are far back. But what those are CDs that have a reflection. And she glued them to a plywood and then put them in her classroom. That's her science area or discovery area. A lot of people call it "discovery area." And those are pictures on her light table. And they reflect off the CDs that you see on the table. So when the child, the toddler goes up to the CDs, what they're doing is they're seeing many in the mirror right there. Magda Gerber — how many of you have heard of Magda? Yes! Oh, that's so good.

What would be so great, if we could look at this and share this with families and think about them not having to worry so much about, if we could just let children do what they're capable of instead of trying

to teach them all these things that they think that they have to be doing. You have the child here that's actually doing a plastic bin that was closed. She figured out how to open it. Of course, they always do that. And then she realized there were separations, and inside is the top tins to the mason jars, which some of you have those, were in your bag. And then what kind of concepts would she be using by placing them in the different sections?

[Participants speaking off-mic]

Margie: They were saying size, separation, selection, seriation — 'cause they're different sizes. So I'm going to just keep going about — Because I see you already can see where we're going with helping revealing her thinking, but what we're going to be doing with families, as we go into that home visit or we talk to the families in the center about what kinds of things are they interested, what kinds of things do you see them doing? So this particular child took the rings from the mason jars and she was twirling them around. Talking to the families. What are their interests at home? This family has a Siamese cat. The cat didn't like the baby at first, and so they had to learn about teaching her about being gentle with the cat so the cat wouldn't always run away. But how do you take that kind of information you get from the families of learning who their pets are and what they're doing so that you can take it into your program? So this picture that's a little bit hard to see, if you look at the bottom, there's little dogs that you can take for a walk. There's little dog outfits. There's little cat carriers. There's pictures of dogs and cats. But wouldn't it be great for those of you — and I see so many of you have iPads — that you could take the iPads in the home and take pictures of their pets? And then have pictures of their pets instead of an anonymous poster that somebody bought at — someplace.

When we talk to families about what science is, science is investigation. Science is when they're doing a hypothesis. Science is when they're given the skills for noticing what is going on in their learning. How they're researching. How they're noticing all the things that that child is learning. And when we help them see, we're meeting our goals. We just have to document it, right? We just have to write it down. We have to take the picture. We have to think about all the different ways that we're going to be talking to families about guidance, about being gentle, about sharing, about reading, the importance of reading. And I will tell you one thing, too. At thrift stores and at consignment shops, you can get those hard books that sometimes can be expensive. But I also have bought them very inexpensively, too, like at Ross and the Dollar Store, that are the hard books. And the other thing about that they don't need the media. They don't need that. And the Academy of Pediatrics have recommended that they not be exposed to media before the age of 2. And that they're available, and that they're fully available to the families, to their children when they come home. One of the things we did in my school was, I talked to our director at our lab school about families that were coming in with their cell phones. Have you seen them do that? And what was happening was, the social-emotional kinds of things that would normally happen where the parent says, "Oh, hi, how are you, mija," da-da-da-da, that wasn't happening because they were on the phone. So we decided to put up a sign "no cell phones" in the center. And letting them know when they say, "I don't have time, I don't have time to do those kinds of things, those educational things, "about that every routine is an opportunity for language.

This is a dry diaper. This is a learning experience diapering. "I'm taking off your wet diaper." All the routines that children have to have — napping. This particular dad likes to be outside, he likes to

barbecue, but guess what? The grandpa gave him a hammock. So guess who likes to take a nap with daddy in the hammock? This is such a nurturing experience for the baby and the daddy. Because we keep saying, "How do we get dads involved?" I'll tell you — Get them a hammock. They'll want to be a part of naptime. And this child is also a child who has an auntie, and so this is her auntie that's also very engaged with the family. And we were talking earlier in some of the other sessions, those of you who went to the plenary, about that it happens before birth. But also when they start talking from birth. And this particular daddy, the baby was crying. She's 20 minutes old. She's 20 minutes old. And he said, "What do I say?" And I said, "You can say whatever you want in your first language." So he started speaking to her in Spanish. And she took his hand... that's what you see. And, of course, some of you probably have already figured it out, that's my granddaughter. [Laughter]

Mary Jane: Well, that little note that I slipped Margie was, "we're almost out of time." And I regret that. You've been a great group to work with. We'd like to finish with a few summary slides and points. We reviewed with you what I call the reflective planning cycle. You observe, you reflect, you document, you reflect, and then you interpret. And then you plan, and that generates anew an opportunity to observe and reflect. We also looked at the fact that, when you observe, when you document, when you reflect, it generates the data that we need for assessment. So, if we look at this process of having multiple applications — we're planning curriculum but we're also gathering the data, our ongoing documentation — the photos, the notes, the work samples, those scribbles here and there. That then becomes the data that we need to reveal the concepts and skills that we are responsible for showing when we're reaching our school readiness goals. And it happens in a very simple way. It's not as if we have to generate a lot of papers. One planning form not only gives us our curriculum plan, but it also holds the data. And what I've underlined on this slide would be the concepts that we're asked to provide data for. Do they have a concept of number? What about classification? What about causality? What about the ability to talk to a friend? So, if you think about documentation, it's a pretty powerful tool, because when we notice and when we ask how are they revealing their thinking, and when we suggest that this is how we think about curriculum, and when we take one more step and we say, "And how do we invite families to do this with us?" that becomes our work.

And in the process of doing that, we're not only doing our curriculum planning, but we're also doing assessment and we're doing family engagement, and I think that's what we're being asked to do with our Early Head Start programs. But, to do this, there are two things we need. They're essential. One is, we need the tools. We need access to a camera and access to a way to sit and look at what we took photos of, together with the family or together with our co-workers. We need time and tools. So we need the tools and we need time within our day to sit and reflect together on this. And sometimes that's hard to come by, but as advocates for our work, we need to think about how we structure the teacher or the home visitor's day so that there is set-aside time for teachers to come together and to think together about how children are revealing their thinking. In other words, practice those two things that we did today — asking, "What do you notice them doing?" and "How are they revealing their thinking?" We're going to leave you with this slide. And it's a quote. We've called Carlina Rinaldi into the room several times with her wise words. And again, she's the pedagogical director for the schools in Reggio Emilia that have inspired so many people's thinking about appropriate curriculum for young children. She says, "If we believe that children possess their own theories, interpretations, and questions... then

the most important verbs in educational practice are no longer 'to talk,' 'to explain' or 'to transmit' — but to 'listen.'" So, we hope you go out and listen to babies.

Margie: So we want to thank our virtual audience. We want to thank you all, too, for participating today. Thank you.

Mary Jane: Thank you all.