KNOWING AND SHOWING

EVIDENCE AND METHOD

In the complex landscape of American education, teachers must prove the value of integrating the arts into their teaching. This session explored compelling ways that have been developed to provide evidence of learning through the arts. Participants worked with video examples of children learning in three different settings, addressing the questions of how we know (evidence) and how we show (methods of representation), and considering how the arts can powerfully expand—and also reveal—children's capacities to engage with natural and social worlds.

Bronwyn Bevan moderated the session with presentations by George Forman, Karen Wilkinson, Dennie Palmer Wolf. Steve Seidel served as discussant.

BEVAN: This session was organized because, in addition to talking about Art as a Way of Knowing, we wanted to show examples, as we did last night at the Exploratorium's After Dark program.

We have three presenters today who have been doing a lot of work over the years and documented activities that involve various aspects of art. One goal of the documentation is to establish a record of the kinds of learning that occur.

"What are the forms of evidence that matter, and how can we communicate them?"

We want to address the big question, "How do we talk about art as a way of knowing, primarily to educators who may not understand or accept the argument? Also,

"What are the forms of evidence that matter, and how can we communicate them?"

We will have three presentations of twelve minutes each and then divide into groups. The presenters' videos have been downloaded to a computer. Each group will watch one in depth and discuss it.

The presenters will talk about their documentation, but in the small groups, we're asking everybody to discuss what kind of learning they see, and how the documentation captures art as a way of knowing. We also want to know what kind of power is being released through this process that perhaps would not be possible without the arts.

Steve Seidel, who is our discussant, will make some overarching comments. Afterwards we will discuss the message that we want to communicate and the possible methods for doing so.

First I'm going to introduce George Forman, who is a principal at Videatives, a company that videotapes children learning. George has been involved with Reggio Emilia for many years and is a professor at the University of Massachusetts.

In drawing and block play, the child has entered the world of the medium, experiencing a type of empathy that can be completely intuitive and unconscious, but is no less satisfying to both the artist and the viewer. Children's invention of beauty through media disposes them to seek beauty in the world outside of their own inventions, and to care for objects and others.

FORMAN: Thank you. A child shaping a curve with a pencil and paper, building with blocks, or gluing small objects on the board, sometimes engages these materials with great care and concentration. These are special moments, artistic moments, moments carried forward by an aesthetic current. What can adults learn from close observation of these moments? What significance do these moments hold, and how do we support this concentrated caring, which Vea Vecchi has identified as the most important component of Reggio Emilia's approach to education? Vea wants us to value the aesthetic experience in young children, because it is their attempt to form a deep, authentic, and caring relationship with the world, the world composed of objects, other people, and media.

During an aesthetic experience, the child creates beauty. The symmetry of a curve that blends into a bend almost says that the new curve should not begin abruptly,

because of how jarring it might be to change directions at a discrete point. Also, the symmetry in a block structure satisfies the child, perhaps because he found a way to relate these blocks here to those blocks there. The idea of relations is essential to Vea's way of talking about the aesthetic experience. The blocks are no longer a jumble, but contain relations—friends, if you will.

That's the premise—that play is a type of empathy, of caring, of building relations to the physical, social, mental world. I will now play two video clips of children engaged in aesthetic moments. In the first clip, Chris is building with blocks. He's already built a tower. After the tower falls, he shifts to a wider base, making a side-by-side placement instead of one atop the other. From that point forward, he carefully concentrates on the rule of symmetry. He needs to find a compromise between the aesthetics of symmetry and the pragmatics of physical balance. I'll freeze frame when this happens. He finds this compromise by re-orienting the blocks to rest on their width, rather than on their length.

The distances are not the same, as you'll see. He is developmentally challenged. I want you to think about that. He has to do something with that block. It won't fit. There's not enough space. See the tenacity in the hand? That's part of his concentration. So he goes back to the stacking, but he can't leave that one there by itself. It wobbles. He doesn't like that.

Now see how he reorients this? Almost immediately, if this fits, he says, "Oh, then that one must fit." The movement of knowing is wonderful. It's as if the structure has an implication. It's an if/then proposition. "If I can get this one to fit, then I can get that one to fit, because it fit before." There's a high level of thinking going on in these moments, as well as care and aesthetics. His disposition to create aesthetic relations among the blocks gave purpose to his search for the pragmatic relations of stability. His compromise was as clever as it was beautiful. His satisfaction came both from the fact that his structure did not fall, and from the fact that it looked like what he wanted it to be: something more complex than a tower, something with several forms of symmetry—an invented and integrated relation between his goal, the blocks, the symmetry, and nature, which is the center of gravity.

It's relevant to know that Chris, a developmentally challenged boy, was about to be held back in his mainstream class for a second year. But a careful analysis of this clip and a few others convinced the review team that Chris had a level of thinking heretofore unnoticed. He was promoted and he thrived. So now what? When I talk about this, it does have practical implications.

In the next clip we shift our attention, not so much to the final product, but to the structure of the procedures that the child used. This is Caron, who is working on

little decorations. Caron, a three-year-old boy, glues small objects on a 2 x 4. As I was filming Caron several years ago, I did not know why I was filming, but I saw a purpose and care in his face and placement. When I went back to this tape and looked at it five or six times, I saw the eloquence of what he was doing. He was not simply gluing objects onto symmetrical placements, he was doing so with increasing efficiency, skipping steps and never regressing to the more linear way of working. Let's watch Caron, and then I'll return to the significance of his parsimony.

The first part shows you the real child. Then it's going to shift to a computer-generated animation so that you can see the pattern of action more crisply. He has already applied some glue, and has put his spatula, which also contains glue, back into the bin. Then he picked up a doo-dad and placed it there. That's a technical word, doo-dad. It's not at the same distance. See the nail? That's a center of focus. He's now searching for an object that is small like this one. He picks up one that's too big and aborts. That's always a key to high-level thinking, the aborted move: "I changed my mind. That's not what I wanted." So he puts it there. Now he'll give us a big smile.

This is what I want you to notice. This matches, frame by frame, what happens in the video. Notice that he gets extra glue so that he doesn't have to go back to the bin, and he puts it over here. Now he'll never regress. He'll always have the extra glue on the spatula. A few moments later, he picks up two objects at once, which eliminates going back to the bin. The whole thing took about 30 minutes, so it's a time compression.

This clip is an example of a child thinking about the structure, dare I say the beauty, of his actions' sequence. Would you agree that A1 to B, then A2 to C is a somewhat less elegant, a more banal structure than combining A1 and A2 in advance, and then splitting one to B and one to C? That's what he was doing. Folding two objects simultaneously presumes that they're paired. That splits the action: the first object folds to one place, the second folds to another, so that it's embedded. It has what Piaget calls implication. Holding two objects at once anticipates a trip to sea that has not yet happened. This nesting of a trip not yet taken inside a trip that is imminent is truly beautiful and high-level, don't you agree? Caron does this twice, once with the glue and again with the objects glued. He does this by reflecting on the structure. Experience teaches you very little. Reflecting on an experience teaches you more. He's reflecting on his actions and seeing the pattern. I do not view Caron's change as an expression of tidiness in the literal sense, but an expression of how cool it is that one can compress two trips into one, how utterly elegant yet completely unnecessary it is that this can be done. I wrote a paper once called "The Necessity of the Unnecessary," which is the theme here.

By considering the aesthetic attitude that children have toward their work, we discover their high-level thinking and how it establishes a more careful relation to the world of objects and actions. If supported by parents and teachers, this aesthetic disposition of caring and empathy will transfer to the other worlds in which they participate.

BEVAN: Karen Wilkinson is a colleague of mine at the Exploratorium and the genius behind the Tinkering Studio. You may have seen Karen, Mike, and her team last night at the Exploratorium.

We believe that people have an extraordinary ability to think with their hands, and we want to offer opportunities to see evidence of thought in what we do in that space.

WILKINSON: The Tinkering Studio is a prototype space. It's a lab space on our floor in preparation for our move to the piers. It's based on constructionist and constructivist thinking. We believe that people have an extraordinary ability to think with their hands, and we want to offer opportunities to see evidence of thought in what we do in that space.

The Exploratorium's Tinkering Studio

My interest in this space is professional development. I work with the Explainers, who are new to the museum field. They don't know how to engage the public, and we're asking them to do something different. This space has a lot of loose parts, an open-endedness. We're interested in tool use. Many things in the Tinkering Studio are different from other areas of our floor. I want our group to develop as practitioners, and Explainers are a big part of that group.

As I mentioned before, it is very messy. Speed is one of the things that make it messy. We have a group of dedicated staff, volunteers, and Explainers who work with us. I am going to discuss their work, but I have to tell you that they are talented and dedicated beyond belief.

For the past three weeks, we focused on cardboard. We bring artists into the studio and do a lot of work with them. We think of them as instigators as well as collaborators. We appreciate the way that they think, because good things come from it. Dax Tran-Caffee is a puppeteer, a performance artist who works with puppets. He talked last night, not only about performance, but also the way in which he constructs his puppets. Ann Webber produces stunningly beautiful volumetric pieces. Cardboard staples and shellac are her primary materials. Anton Tang is a photographer. Jason Lentz makes giant cardboard robots.

I want you to see two types of documentation. People often say, "This looks like a lot of fun, but what are the students learning?" That sends a dagger to the heart, but you have to respond. I'll discuss two types of documentation. This first one is a sense of the cardboard work overall. It's shot by a professional videographer who brought it to Open Night. Open Night is an opportunity for artists to exhibit and discuss the projects they're working on. Open Night represents one day of an artist's work condensed into three minutes of video.

I want you to get a sense of how much is going on here. We'll look more closely at the experience overall and zoom in on one child's experience—one section of her day. We're going to look at an activity involving the work of artist Ana Serrano. She's a young Latina artist who's interested in the architecture of the urban landscape. She grew up in Mexico and Los Angeles, and she constructs. This piece, which is called Cartonlandia, is a very large piece. She photographs doors,

windows and other architectural elements in the city. She brought many of them with her and encouraged people to make this a collaborative piece.

At the Exploratorium, it's essential to look closely at an activity and ask what you learn from it, because you won't do that activity again. Can you generalize about the next activity that you're going to present without slipping into activity mania? My team is grappling with this question now. I don't know the answer.

We believe in the Reggio idea of the environment as a teacher.

We've tried to develop a set of design principles: The design of the activity, the facilitation that it takes to accomplish a project in the Tinkering Studio, and the environment itself. We believe in the Reggio idea of the environment as a teacher.

This video is somewhat controversial. We took it less than two weeks ago, and shared it for the first time with our team on Tuesday, so it's new. The majority of the group thought that the materials invite inquiry—that having Ana present, mentoring alongside us, was important. Also, it's collaborative. People are working on their own, but they're contributing to something larger than themselves.

The girl in this video was eight and was present for 40 minutes. She was asked if she'd like to use scissors, and she said no. Later she asked for a pen. Her only other words were, "I'm going to paint it."

BEVAN: Thanks, Karen. Dennie Palmer Wolf, principal of Wolf-Brown, will present work from a school context.

WOLF: It's both school and after-school. My work helps organizations like the Exploratorium and others. Maddie Holzer and I have worked at Lincoln Center. My job is to be a thought partner and to help people understand what their work produces for kids. In an accountability-driven world, I also have to answer, "What have you done for my reading scores lately?" How can we have other forms of measurement and documentation that speak to commonly held public values?

This is a remarkable opportunity to discuss how this community might be the crucible for inventing new, powerful, and beautiful ways to exhibit understanding. This work derives from four factors, one of which is capability theory. Those of you who know Amartya Sen's work, *Equality*, are aware of his deeply held belief that equality requires certain ways of doing and being. It's not the ability to buy a car, a washing machine, or a second-generation iPad that's important. It's the ability to engage in civic processes, to have access to the transformative power of education.

In the 21st century, one of the capabilities that we should try to equalize is the ability to become an innovator, because it will make a difference in many kids' lives. We also have the obligation to turn research (and evaluation) inside out. Research should not only collect information, but also return it.

In the 21st century, one of the capabilities that we should try to equalize is the ability to become an innovator, because it will make a difference in many kids' lives. It is an ability that is unevenly and unequally distributed, so this is a social justice mission. We should also rethink creativity and revise the 20th century view that very few people (03%) are creative. Innovation is as common as breathing. Some people develop it to zenith levels, but it's human; it's not rare. We also have the obligation to turn research (and evaluation) inside out. Research should not only collect information, but also return it. We should also ask if we have invested fully in understanding how technology, social communities, and other factors can foster innovative behavior in all children. What George was able to do for those two young people, and what we just saw in the Tinkering Studio, are beautiful examples of that.

Next we'll examine the world of the Brave Team, which is an eight-year-old boy's world. It is made from cardboard boxes. In addition to being a cardboard world, it's also a Lego world, a tape world, and a packing materials world—a native bricoleur.

Brave Team project

Usually, we stop here and say, "Isn't it amazing? Look what you can do with tape." But there's much more. This is an aerial view of the controls. It's also the insignia of the evil figures who have taken over the world. What's interesting is that when we interviewed the boy who created this and asked if he would talk about the world that he invented, he first had to pick up the figures and make it very clear that one of his characters is a very bad guy, a second one is a very good guy, and a third character is the transitional figure who can't be trusted.

First of all, there's an embodied level of knowledge, which isn't apparent when looking at the object. If you ask him, "Where did this come from?," he produces a remarkable set of drawings that demonstrate the basis of all this—where the iconography of the Brave Team comes from. This is one of the warriors. This is another of the warriors. These are the Mists, the transitional characters who come in and out.

Results unfold over a very long period of time. If we want to document the effects of incredible environments, we must be willing to stick with it for a long time and create environments in which kids can collect and save their materials undisturbed.

If you want to document this kind of work, it's important to document all of it. Very often we expect to see results after five minutes, a six-week module, or one section, but we don't. Results unfold over a very long period of time. If we want to document the effects of incredible environments, we must be willing to stick with it for a long time and create environments in which kids can collect and save their materials undisturbed. One of my favorite stories about young visual artists involves a young man growing up in Queens, New York, who finally convinced the super to let him save his work in the furnace room, because there wasn't room in his apartment. Thus, the incredible importance of time and space for kids.

I also asked this young artist what inspired him. He said that the idea of the first Brave Team occurred when he was three and began watching Star Wars. At school, he and his friends invented The Miracle Workers, a game in which they defeat the evil forces. Then a cardboard box arrived, followed by another cardboard box, then another… This is essentially five years of work.

The saga of the Brave Team began with two brothers, Dactyl and Phozik. Phozik was extinguished by the forces of darkness, but Dactyl had six sons, and so on. The student can recite the whole genealogy. He invented Dactyl and Phozik when he was three or four. Slash, Git, Shredder, and Maury are the characters he invented when he was five. It marks the first time in this epic that bad people appear. When he was six and seven, he invented the Miracle Workers, the Mutants, and Slashers of the Dane. Some of his characters are both bad and good.

But we must think also about the document as a gift. The documentation involves no research or evaluation that doesn't give back to the participant children, teachers, and families a sense of the capacity for invention, creativity, and innovation.

So what is this? It's more than just cute. Several principles emerge. First of all, we tend to evaluate a document with the notion that we, as a program, need the information that it contains. But we must think also about the document as a gift. The documentation involves no research or evaluation that doesn't give back to the

participant children, teachers, and families a sense of the capacity for invention, creativity, and innovation. We have a lot of work to do. I would argue that science museums are probably the best place in which to do this work, to think about how we make learning visible.

The Exploratorium is a science center in which each exhibit about clouds, weather, memory, or anything else, begins with a group of kids. They have an equally long process that involves thinking about documenting and talking about those things that go on display. It opens the night that the exhibit opens, which is what I mean by inclusive exhibitions.

We believe that the purpose of a science museum is to encourage the next generation to value science, curiosity, and the arts, but we don't really believe that. Maddie Holzer at Lincoln Center believes that we should encourage kids to document their own learning. We shouldn't presume to know their mind map or what their brains are working on. They will tell you.

Imagine an exhibit that would say, "This is the evolution of a moral order involving questions about good and evil." We should ask how to make such an exhibit, not only, "How do I balance?" "How do I cut?" "How do I use an X-Acto knife and remain intact?" What would the forms be of such an exhibit? What kind of video would say to museum visitors, "Although these kids are only five, six, or seven, they are asking these questions very seriously and on this level"?

Imagining an Exhibition on Heredity

Imagine an exhibit about genes. This image shows a young woman in Providence who's explaining how she became a musician. She responds, "This is not just about having perfect pitch or being nimble with my fingers. My musicianship is a social construction. It comes to me from all of these things." However, in an exhibit about heredity, where does that kind of material show up?

Imagine an exhibit that's about memory. This is an image of the Vietnam Memorial. This is a snow cage or shrine that was built by a child who had lost a brother. On that brother's birthday, the child built this shrine and gave it to his parents as a present. But to have this image in that kind of exhibit implies that this is not an adult concern. This is not just a neuronal issue, this is a human question. For kids, an exhibit that highlights their activities and memories would be extremely important, and it would ask us to think about establishing more such exhibits in other institutions.

BEVAN: Our goal now is to divide into small groups and talk in depth with one of the presenters about their work. Alternatively, you can discuss what was said in the larger group. The goal is to think about what kinds of learning are visible in the documentation, and how art as a way of knowing might be part of what you're seeing, and why that's important.

I'm going to introduce Steve Seidel, a Professor of Arts Education at Harvard who has worked with Harvard's Project Zero. After his talk, there will be a whole-group conversation about our message and our method. What are we saying, and what tools do we need to get the message across?

SEIDEL: Thanks to the presenters. I thought that it would be good to spend three or four hours discussing whether learning is visible. There's an assumption in this conference about the visibility of learning. But we don't have that much time.

Whatever your initial thoughts are about this, your thinking will probably shift, and you will find yourself in a direct confrontation with your own thoughts and understandings about the nature of learning. We're moving quickly over that, and it feels embarrassing and awkward, possibly wrong, but let's mark it as an essential question, which is rich for much consideration.

We're at an incredible moment in education, especially with the emergence of technologies, including video cameras that kids can manipulate with ease. It's not where it was 25 years ago. We're talking about making learning visible.

I feel a resonance with the perceptual conceptualization that Alva Noë talked about this morning. We all spend time in learning environments, whatever they are, and whatever they contain. From a learning perspective, you could take the exact language that he used and notice a lack of dimensionality, a flatness. But then you could ask, "See me if you can." That's what each of you has done for us today.

Most of us look at student work and think, "That is so charming. That is really cute. It's so cool." Or you may not see anything. I had the privilege twenty-some years

ago to have Dennie as my boss, supervisor, and teacher. She started me looking at the things that children make.

That's still part of my regular practice. I now have a large group. You're all invited to join us for three hours on the first Saturday of the month, from October to May, to look at student work. We're not just looking at student work, we're exploring and trying constantly to enrich the methodological approaches that we use. That's the key. How do we make learning visible? I noticed so many beautiful provocations and thoughts about that, both in the presentations and in the conversations.

"Show all of this to the superintendent of schools in a major urban setting and see whether you can accomplish a perceptual shift." It doesn't usually happen. That's the work we need to do. We need not shrink from that, but try to figure it out. When we do, it won't turn the world around overnight, but it will shift things a bit.

To go back to Alva Noë's notion, the presenters are trying to figure out how to do that. In the small group, Dennie said, "Show all of this to the superintendent of schools in a major urban setting and see whether you can accomplish a perceptual shift." It doesn't usually happen. That's the work we need to do. We need not shrink from that, but try to figure it out. When we do, it won't turn the world around overnight, but it will shift things a bit.

In response to the question, "How do we talk to people who don't agree with us?" when we're talking to the superintendent, the funder, or whomever, we should remember that they are both people and representatives of their institutions. We should try to meet them on that ground. The superintendent may feel that this is not the data that he or she was looking for, but you might be able to get the superintendent to talk to you about what kind of information you want about your own children, about your grandchildren, about anyone you care for. We share this problem. iI's not just my problem, it's our problem.

The two questions that Bronwyn asked involve method and message. One method that people used to capture visuals was to slow the passage of time. Another was to speed it up. We saw how useful that is. We didn't have a half hour to watch Caron work this out, but we now see the process, and we give it value. We believe that it was a legitimate and powerful tool. A second is the various angles. A third is to interview the child. Dennie's work recognizes that a one-on-one conversation may not always be sufficient. Thus, another method is to use graphics and materials to create works of fascination and beauty about the way the mind works. Also,

listening for, and eliciting, narratives. Where did you begin? Where did you go? We'll come back to the idea of narratives, because they're important.

One method is making interpretations. It's one thing to have the data, but it's another thing to make sense of it. The goal is to make interpretations as an offering, and as an invitation to people, including the children and their teachers, to make other interpretations, to say how they see this. Then we can engage in an interesting and rich dialogue.

Those were some of the important methods. I'm curious to know if people saw other methods in the work that was presented, or in your own work. You have used other methods to make learning visible. We'll come back to messages and how you communicate them. But are there other methods?

FORMAN: Yes, we did. I have a video of a child, age two, playing with billiard balls on a table, with the cue sticks lined up. I have another video of the same child at age three. Digital video enables both videos to be viewed simultaneously side-by-side. You see some kind of general gestalt. You try to see development or difference, and it's more of a synthesizing way of looking rather than a micro-analysis. That was an interesting way to use media.

FEMALE VOICE: We mentioned attitudes about science, or about creative thinking to understand science, or using arts in science.

SEIDEL: Focusing on attitudes is worthwhile. Were there methods that you discussed, to see what they were?

FEMALE VOICE: Yes. Becky Carroll, an evaluator with whom we've worked, helped us with it. It was really a pre-and-post. We saw the kids maybe three times, so we did a pre-and-post. While we didn't know them over a long period of time, we did see a shift.

ACKERMANN: It is always difficult, even if you write about your own very thoughtful analyses, to do it so that it doesn't remain anecdotal, that you don't take this beautiful moment of thinking, or of something important going on, and have it get lost in the middle of a verbose interpretation. When I hear about the boy with the box, I have an image of a musical score in my mind. A musical score allows you to understand, especially if you work at different temporalities at the same time. You have a way to put these insights into something that is more like a musical score at the beginning than a narrative, because you get the parallel, you get harmonies, and you get different threads. It's important to remember that it should not remain anecdotal, but it's difficult not to fall into that trap.

BEVAN: Edith, what do you mean by anecdotal?

ACKERMANN: I mean that terrible problem that we have had in working with you guys. For instance, what's the level of granularity for each purpose? If we have this beautiful jewel of dwelling deep in a moment of thinking, how will you use these fragments to tell a story that is at another level of granularity? What I call anecdotal is the failure to do that well. Sometimes I accuse somebody, such as Steven Halpert, of doing that. You take a wonderful anecdote as a parable to make yourself look good as an interpreter of that parable. The voice gets sucked out of the person, and the intelligence that went into the context in which that parable was used. It has to do with giving back. How to avoid losing a nice anecdote in a sea of…

FEMALE VOICE: Also remember that the child is the auteur; you aren't.

ACKERMANN: Exactly.

BEVAN: I want to be sure that I understand you. Are you saying that when you have the examples, you need to link them and create an account of what's happening so that you're making a case for something, rather than merely telling a juicy story?

ACKERMANN: Well, let it grow. What's so nice about this work is that you let it grow until it becomes so thick that it tells the story by itself. But I don't know what you think about it. If you fall in love with this small anecdote, you can use it in your work, or to make a point. It requires delicacy to do this well. That's my point.

FORMAN: Good. Agree or disagree, I don't know yet. I work with schools, and we do video vignettes, which are two or three minutes. We tag them by categories, and we name them funny things such as, "Tea Party" or "Bottomless Boxes Are Better." This becomes a short-hand, our embodiment of our expertise as professionals working together. Two years later we can say, "That's like Tea Party or less like Bottomless Boxes are Better." It creates a discourse, a vocabulary that's contextualized in the school. They may be anecdotes, and they may not tell a large narrative, but they exemplify our beliefs in good practice. Is that antithetical to what you're saying, or just a different purpose?

ACKERMANN: It's a way to build a taxonomy. Our little fragments of stories have to be regrouped in different ways, and they tend to be used.

FORMAN: Okay. We call those playlists.

ACKERMANN: Playlists, yes.

You can't talk about messages only in the abstract. You have to think about whom you're talking to. There is a range of fairly predictable audiences that we've been talking about during this session: the child, and the learners, which includes the teachers. It also includes people who are outside that room but who are concerned about what's going on in that room.

SEIDEL: This is an incredibly rich moment about the question of interpretation and how to handle it. I want to honor the original questions about messages, which I think is also a question about audiences. You can't talk about messages only in the abstract. You have to think about whom you're talking to. There is a range of fairly predictable audiences that we've been talking about during this session: the child, and the learners, which includes the teachers. It also includes people who are outside that room but who are concerned about what's going on in that room. Those people might be administrators, parents, and members of the immediate community. I think of them as people who know the people in the room by name. They are a powerful and important audience for this, as well. There are also people outside who want to know what's happening in that room. They don't know those people by name. They probably know somebody in the circle outside the room. They are also an audience for this and a much larger and broader audience.

One of the important things that Dennie did was to be explicit about the frames that she's using. She framed the materials that she showed us with the four frames, which are four large and powerful ideas. They also tell the person—in this case, us—where Dennie is coming from. We're all coming from somewhere when we send a message.

Our frames may not be the same frames as those of the people we're talking to. If they aren't, it's important to be as explicit as possible, because your work only makes sense when you can explain where you're coming from, and when it can be as explicit and as elegant as Dennie's work. It took about two minutes, but we all understood it clearly, even if we disagree with it.

I want to talk about the messages that I hear loud and clear in this work. I would call them basic, but they're never-ending. One is about the ability of children to do very complex, wonderful work, and also, as Edith talked about this morning, to learn. Another is the importance of slowing down and taking time to look and to value what's close to the bone at the moment of the work. That is also in the context that we all live and work in, at least in schools—perhaps less in informal

learning settings. That's a world away from the decontextualized, narrow, standardized kinds of language that it is coiled around.

MALE VOICE: I wanted to make one point about the question, "How do you convince the superintendent?" Policy-makers care only about local stuff. You can't videotape a classroom in California and show it to somebody in New Jersey and say, "Here's an example." You must get it from a particular policy-maker's legislative district. Then it has much more meaning. That makes it more complicated, but that's what we have to do. Tip O'Neill from Massachusetts said, "All politics is local."

WOLF: I would like to issue a challenge and an invitation. I sit at my desk with colored pencils and graph paper, making musical scores. I want to interact with other people who are doing these kinds of things, and who will help me. I'm a digital immigrant, but I need to get beyond colored pencils. I want a wise, invested technological community, similar to the people in this room, who understand the micro and the macro. I don't know if you will make it happen, Bronwyn, but...

FEMALE VOICE: Yes, she's nodding her head.

BEVAN: I was shaking my head, actually. No, no, yes.

WOLF: It is so important.

FORMAN: Dennie, do you know the rubric that we like; the documentation group that we like?

WOLF: I don't.

FORMAN: Call David [Fernie] down the road.

WOLF: David Fernie?

BEVAN: I want to thank everybody, all the presenters and Steven, as well. This conversation was rich, but we're ready for the three-day conference now. It's good to know that and to work on it, so thanks a lot.