

**The “A” in Steam:
Research on the Go Podcast**

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Announcer: Welcome to Head Start Talks, where big ideas support your everyday experiences.

Amelia Bachleda: Hello, and welcome to Research on the Go, a podcast where we explore some of the latest research in the field of child development, its implications, and practical applications.

My name is Amelia Bachleda, and today I'm joined by Marley Jarvis.

Welcome, Marley.

Marley Jarvis: Hi! Thanks for having me.

So, Amelia and I are both from the National Center on Early Childhood Development, Teaching, and Learning, and we're based at I-LABS – the Institute for Learning and Brain Sciences at the University of Washington in Seattle.

Amelia: In this podcast, we want to not only talk about the research itself, but also to provide a space where we can talk a little more deeply about ways to incorporate it into your work supporting grantees.

Marley: Today we'll be paying particular attention to how babies engage with the "A" in STEAM – the Arts.

Amelia: So, at first glance, art seems like it isn't as closely related to science, technology, engineering, and math.

So, Marley, why is it part of STEAM?

Marley: When you're first thinking about it, art kind of seems like it doesn't fit with those other four topics. Let's take a minute, though, to think about what steps you might have to take if you were to make a painting or a drawing. First, you have to carefully observe what you're looking at or what you want to draw. Then you have to make a plan about how you want that painting to look.

You might decide that you need to edit this design as you go, maybe solving little design problems if you notice that you're starting to run off the page, for example, and then once you're done, you might think critically about your work, you might decide what you would change or try differently, and you might choose to make some revisions.

Amelia: This is all sounding a little bit familiar to me, perhaps a little bit like the inquiry cycle.

Marley: Yes, exactly.

Amelia: And, in fact, this process of creating a work of art is a lot like science or engineering. Not only do you have to think creatively, but you have to plan, design, solve problems, adjust on the fly, and that's just like what scientists and engineers do. And if we look at any preschool classroom, we're probably going to see art materials.

The arts are relatively common, but how can programs make art more accessible to infants and toddlers?

Marley: I'm so glad you asked that.

So, similar to supporting science, technology, and engineering, we really want to think about setting up the learning environment. So, you might guide programs in asking some questions about their learning environment. So, things like, are there materials that children can easily access, use, manipulate?

Amelia: And this is especially important to consider when you are working with children with suspected or diagnosed disabilities or delays.

Can all children really access these materials? Is there a dedicated space or a dedicated set of materials that can be used easily? In the home, are there art materials that children can find and use on their own?

Marley: Yeah, and that's such a great point.

So, thinking about for infants, are there large crayons, maybe finger paint or colored foam, or other creative items with texture and colors to explore? And then maybe for toddlers, are there paints, crayons, materials to create – how about a statue or what about a tower?

Amelia: Right.

And having those items that are easily accessible and easy to use just makes it that much easier for a child to express themselves creatively, and that's an important aspect of the arts – communication.

So, Marley, what can programs do to engage with the arts as a form of communication and expression in a more intentional way?

Marley: Yeah, so art, as you said, is such a powerful tool for communication for children and adults alike. For toddlers, one of the best things to do is to encourage them to talk about their artwork.

So, even if an adult thinks that they might know what a child is drawing or creating, you might want to try asking about it – something like, "Tell me what you were working on," or, "What is happening in this picture?"

That's often a better tactic than just commenting on the picture – "Oh, that's nice. I like your tree with the apples."

In that first example, we're giving children space to explain what they are creating exactly how they want to. And, of course, what we think is a tree might not actually be a tree at all.

Amelia: Right. It might be a party of snakes that are having lollipops. How do we know that it's an apple tree?

Marley: Yeah.

So, we don't want to limit their ability to communicate through arts with us by kind of making assumptions about what they're drawing.

Amelia: For children who are dual language learners, encourage and welcome responses to these open-ended questions in all of their languages, and, at times, expect that continued drawing on the part of the child or gestures may be how that child chooses to answer a question.

That child may not yet have the language skills to describe their fabulous snake party with the lollipops.

Marley: Yeah, and I really love that.

So, thinking about how we can allow the arts to boost the communication tools that all children have at their disposal, whether it's through drawing or dance or music, and we can help model this, as well.

So, as someone is sitting alongside an infant, playing with colorful foam, they might describe what they are making, what they are feeling, and how they are expressing it through the art. Someone might say, "I'm feeling tired today, so I'm moving my hand in big, slow circles. I'm moving my body in a way that expresses how I'm feeling."

Amelia: And this all brings up another point, which is moving our bodies.

We've been talking a lot about the visual arts, but, Marley, can you tell us a little bit more about other forms of art and expression?

Marley: Yes. I'm so glad you brought that up. So, the arts include so much more than just painting or drawing. It also includes things like dance and musical expression, like singing or playing instruments, or dramatic play. So, these are all wonderful forms of art and expression and a great way to get out feelings or express things.

Amelia: So, for example, think about a toddler who is having some really big feelings. We've all been there, right? So, programs can think about helping toddlers create a way to express and work through those big feelings. Dance can be a great way to do this. Maybe they can think about what an angry dance is, a happy dance, a sad dance, an "I have too much energy dance," or a silly dance.

Marley: I love that.

Those are great examples. And if you have little ones – so infants – adults can bounce infants along to music, and through that, they can explore different rhythms and patterns, and, in fact, a recent research study found that if infants are bounced along to music, they learn not only to identify musical

patterns they heard in that music, but that they also get a boost in identifying patterns and language, as well.

In addition to learning rhythmic patterns, music and songs are an excellent way to learn language, particularly for children who are dual language learners.

Amelia: Right. And programs and families can also consider making songs or music a part of routines, both in the sense that songs can be used to outline the steps of a routine like getting ready to go outside.

Marley: I had a brushing-my-teeth song when I was a kid.

Amelia: That's excellent. So, the different steps of brushing your teeth, maybe turning the water on, squeezing that toothpaste on.

Marley: Making sure you don't run the water for too long.

Amelia: And the music itself can also be used to help with transitions. So, consider soft music that signals it's time for a nap or bedtime, or maybe more energized music that signals it's time to stop what you're doing, clean up, and get ready to go outside.

So, we've talked about many of the benefits of incorporating the arts into children's everyday life and routines, and while I think we can all agree that there are many benefits, sometimes parents still worry.

Parents are often okay with their children learning about science and math, but art – even some schools feel like there isn't time to incorporate it into the day. So, Marley, how can programs justify the time that they dedicate to the arts?

Marley: Yeah. So, as you say, many people worry that by spending time studying the arts, children will miss out on essential skills like reading, writing, arithmetic. But, really, this couldn't be farther from the case, and a great place to start is to think about how you can connect the arts to essential developmental domains.

Amelia: Right.

So, for example, in the Approaches to Learning domain in the ELOF, important developmental indicators in the Creativity subdomain include using language in creative ways – sometimes making up words or rhymes or using materials like paper, paint, crayons, blocks to make new and novel things.

All of these fundamental skills are built through access and practice with the arts.

Marley: Exactly. And then if we move to the Social/Emotional domain within the subdomain of Emotional Functioning, an important goal is learning to express a wide range of emotions, and as we mentioned, one of the best ways to do this is through arts.

Amelia: Right. Think about all of those angry dances, those silly dances, or moving your body as you're painting with that foam in slow ways, sad ways, happy ways.

Marley: Yeah, and then if we move over to thinking about Language and Communication, in that domain, there's a subdomain Emergent Literacy, and this is deeply linked to the arts.

So, some of those goals include things like a child's ability to tend to repeat and use some rhymes, phrases, or refrains from stories or songs, also includes the goal for a child to be able to make marks and use them to represent objects or actions.

Amelia: Right. All of these important goals are deeply linked and are fundamental to this exploration of the arts, and this even extends to the Cognition domain. So, if we look within the subdomain of Imitation and Symbolic Representation and Play, a goal that's outlined there is that a child is able to use objects or symbols to represent something else, and the use of symbols to mean something is intrinsic to the arts. It's part of our fundamental humanity.

Marley: Finally, the arts provide a ton of opportunities to build perceptual skills, gross motor skills, and fine motor skills.

Amelia: Right. All of these fundamental skills are built through engaging with the arts, and if programs need that little extra boost, that support, they can always look to the ELOF and the important developmental indicators that are listed there and identify how the arts are interwoven across fundamental developmental domains.

So, today we talked about just a few of the many ways that adults can help young children engage with art. For infants and young children and adults, too, art is all about creative expression.

Marley: In your work supporting programs, consider creating or encouraging specific opportunities for training around how music in particular can be used to support language learning for all children. It may also be helpful to support programs to connect the arts with various developmental domains. How can the arts support development and language, cognition or emotion, for example? And how can language, cognition, emotion be infused with art? Help programs think about messaging and how they can share the importance of the arts with parents and with families.

Amelia: For more information on supporting children's STEAM learning, visit ECLKC and search for "STEAM."

Thank you so much for tuning in today, and we hope you join us for our next podcast in this series: Early Math Matters: Exploring the "M" in STEAM with Infants and Toddlers.

Announcer: Thank you for joining Head Start Talks.

For more information on what you heard today, visit the Early Childhood Learning and Knowledge Center, or ECLKC at eclkc.ohs.acf.hhs.gov.

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