



Transcript for the [video](#):
TIMPANI Toy Study 2017

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Dr. Jeff Trawick-Smith, Principal Investigator, Phyllis Waite Endowed Chair of Early Childhood Education: Play is the most joyful part of childhood, but it also is quite beneficial to children's development. There's certain kinds of play, in fact, that are particularly supportive of children's learning, their language, their social interactions. The TIMPANI toy study is a scientific investigation of those toys that are particularly powerful in supporting children's learning and development.

Methods

Julia DeLapp, Co-Investigator, Director of the Center for Early Childhood Education: For this year's study we looked at ten different toys that represented the various kinds of play materials that you would see in a preschool classroom. So we made sure that we had construction toys, dramatic play toys, art materials, toys that were more sensory in nature, puzzle-like toys, and replica toys. And then we had four student researchers who would record the children playing with the toys from a separate video recording room.

Amanda Terenzi, Undergraduate Student Researcher: The toys were brought into each of the four classrooms, and they were in there for ten days. And they were recorded for two days in each classroom.

Dominique McLean, Undergraduate Student Researcher: And when they were in the classroom for that day, they would be recorded for 30 minutes during free play time.

Nicole Green, Undergraduate Student Researcher: Then from there we would go through the footage and use the TEPI instrument to code it. So we'd take five minute clips, and we would score it from one to five.

Julia DeLapp: The students coded almost 8,000 five-minute observations of play using an instrument that measures play quality.

Dominique McLean: There were 11 items on that instrument, and those 11 items are broken down into different categories.

Stefanie Dominguez, Undergraduate Student Researcher: We'd have multiple people coding each period of five minutes, so we could establish some reliability to know that we were all coding essentially the same way.

Nicole Green: So we entered the data into SPSS, and from there we analyzed it.

Dominique McLean: There were significant differences between quality of play among classrooms and among the toys as well.

Julia DeLapp: We looked at the frequency of play with each toy, and also how well each toy did in four main categories of play.

Category #1: Thinking and Learning

Amanda Terenzi: The first criteria was thinking and learning, to see if you could see that the child was really thinking as they were playing with the toy.

Dominique McLean: While children are playing, if they're actively engaged in constructing new knowledge, building on their schema.

Child: Um, John? Look. I think this belongs here. It's a plum. A plum.

Stefanie Dominguez: We looked to see if children were problem solving, so they were trying to figure out how to fit puzzle pieces together or trying to do something more above and beyond.

Nicole Green: And also that they're curious about it, so asking questions about maybe the purpose of the toy, or maybe even proposing different things that they could do with the toy.

Child: I made the queen.

Julia DeLapp: The highest-scoring toy in the thinking and learning category was Pies.

Nicole Green: It's a plastic pie that's probably the size of an actual pie, and you can take it apart. It's a cardboard wheel that you can put on the bottom that will split the pie into sections of different ways to sort the pie, and then there are multiple different fruits, all in different colors.

Child: Purple, purple, purple.

Amanda Terenzi: They could sort them by color or put so many in each of the five different sections of the pie. They had to think about what they were going to do for it.

Julia DeLapp: Another toy that did almost as well in this category was a plastic set of animals.

Child: How are we going to find the T-Rex in this mess?

Julia DeLapp: Children demonstrated a lot of in-depth thinking when they were playing with the animals.

Dominique McLean: These two boys were playing with the animals, and they grabbed a book. They were building on their knowledge of dinosaurs, because they were going through and classifying the dinosaurs that they had in their hand with the ones that were in the book.

Teacher: Did you find him?

Child: Right here.

Teacher: Alright, Joe; there he is! That's called a brachiosaurus.

Stefanie Dominguez: A lot of times we saw children sorting them into which animals lived where and what the animals did.

Category #2: Social Interaction

Dominique McLean: Social interaction is when we're looking to see if the children are interacting with their peers, as well as working collaboratively on the cooperative or associative level of play.

Child 1: What's your favorite color of cupcake and mine?

Child 2: I like pink.

Child 1: Ok, let's share the pink!

Nicole Green: Whether or not they are playing by themselves, demonstrating parallel play, or solving problems peacefully with their peers.

Julia DeLapp: We had several toys that did well in this category. One of them was pies.

Child: Let's eat the pie!

Nicole Green: They had to share the pies. They were very engaged with each other, and they were talking a lot about what they were doing, and they were giving each other advice. So one of them would say, "I want to sort that." So then, they would be, like, "Okay, we'll sort it into the different fruits that are in the pie," and they'd go and sort it together.

Julia DeLapp: The cupcakes also scored relatively well in this category.

Child: These are 10 cupcakes! I made them for you just myself.

Julia DeLapp: Children would sometimes work together to figure out how to sort the cupcakes or how to put them together and take them apart, but mostly we saw a lot of dramatic play with the cupcakes.

Child 1: Let's have a cupcake party!

Child 2: Yeah.

Julia DeLapp: But the animals was the highest-scoring toy in social interaction. Children engaged in elaborate play scenarios with their peers.

Child 1: Help, there's a zombie coming for me!

Child 2: EAT! (eating sounds) He's dead. They ate him.

Child 1: Ah! There's another zombie, ah!

Child 2: I got you. I can feed him.

Child 2: We're saved! The whole world is saved!

Category #3: Creativity and Imagination

Nicole Green: For creativity and imagination, we're looking for kids that are obviously using the toy creatively, but beyond that, using the toy for a purpose that it is not necessarily intended for.

Child: Na, na, na, na, na, na, naaaaaa....

Amanda Terenzi: Doing something that you wouldn't expect them to do. Like the magnetic builder for that, they weren't just connecting them back and forth, but then they'd use them as weights, like they were working out.

Child: One, two, three, four, five.

Dominique McLean: They used the whole area the block area, and they made a long train with it.

Child: Choo, choo! Chugga, chugga, choo, choo!

Nicole Green: This was, I think, my favorite category, because it was really interesting to see what they would come up with. One of the girls used Wikki Stix as a—she made a ring out of it, and she went around and gave everyone rings that day.

Julia DeLapp: Two toys scored fairly highly in this category. The first was the animals.

Child 1: And we need some animals for the city, and trees.

Child 2: I want a giraffe.

Child 1: For the city, and we need... Don't forget the trees.

Amanda Terenzi: I think the animals is one that really scores high in that category, because I think there's just so much to that toy. There's trees; there's rocks; there's seaweed. There's all different animals from the jungle, the ocean. If they want to just make all different noises themselves and at one another. And just create these scenes and using their imagination.

Child: Can you make a pathway for my giraffes and my horse?

Julia DeLapp: Another toy that did well on creativity was the interlocking builder.

Stefanie Dominguez: They're little pieces that sort of connect together and that you can build larger shapes with. They would use their imagination to create something completely out there. I saw children create some amazing structures.

Child: Look what I'm building!

Dominique McLean: These two girls were pretending to be doctors. They would pretend like one of the toys was a stethoscope.

Amanda Terenzi: "Oh, pop your legs up on here so I can like pretend like you're a doctor" and just times like that where they were using the toy, but they were also using their imagination.

Category #4: Verbalization

Nicole Green: For verbalization we're looking for students that are talking as they're playing, but also talking with their peers as they're playing.

Child 1: I'm making a fire!

Child 2: I'm making a fire, too.

Child 1: I'm going to roast some marshmallows!

Dominique McLean: We're looking for to see if the children are actively engaged in speech, either with towards themselves—usually like just talking their thoughts out loud—or if they're talking a lot with their peers.

Child 1: This one tastes like blueberry.

Child 2: This one tastes like...

Child 1: This one tastes like raspberry.

Julia DeLapp: The highest-scoring toy in the verbalization category was the animals.

Nicole Green: They used animals a lot for role playing, or just pretend play.

Child 1: I'm watching over the sheep, and I'm making sure everyone's ok.

Child 2: Ok, can you be nice to us, ok?

Child 1: Yeah, there's a lot of mean animals here, so be careful in the outside. So if any of you guys sleep out here, make sure you have a camping fort, ok?

Child 2: Ok.

Nicole Green: They're talking about what the animals are doing and the noises that they're making, and they're talking to their peers to kind of clue them in on how the play is going.

Child: Wherever you see trees, it's an island. An on the island there's pigs, dinosaurs...

2017 TIMPANI Toy

Julia DeLapp: We had several strong toys this year, but one toy really stood out, in ways we've not seen in previous years. This year's TIMPANI toy is the animals.

Stefanie Dominguez: The animals are basically little plastic animals and trees and things that the children could act out, make habitats with, and sort of play with the animals.

Child: No, that's the mama. This is the baby.

Jeff Trawick-Smith: Replica play toys are those tiny people, animals, cars that children have played with, really, for centuries. With these toys they carry out elaborate make-believe roles. It's a highly symbolic form of play.

Nicole Green: There were palm trees and also coral. There were tigers and bears and lions, dolphins and whales.

Child: I got a horse! Oh, look at this one.

Dominique McLean: It had a variety of different items that kids could bring their prior knowledge to the toy to see what they knew about it and what they didn't know.

Child 1: Look it! A rhino.

Child 2: A rhino? I've never seen a rhino.

Julia DeLapp: Animals had a significantly higher overall score than all of the other toys. And one of the things that really made it different from previous years was that it also scored the highest in almost every category of play.

Nicole Green: As soon as I started seeing kids play with the animals, it was completely different, like it's—it was such a higher level of play. They were just so interactive with each other, and they were so interested.

Child 1: Look at this tree I'm holding.

Child 2: Whoa.

Nicole Green: Every time the animals was put into a classroom, kids did something different with it.

Stefanie Dominguez: They were creative; there wasn't a yes or no way to play. The children could do whatever they wanted with them. They could act out scenes and different habitats.

Child 1: Yeah, let's make an island safari, right?

Child 2: Yeah.

Stefanie Dominguez: They could make a zoo; they could do all these different things, and there

wasn't one right way to play.

Dominique McLean: It's an open-ended toy, and the kids can put their own knowledge in their different, their schema, to the toy.

Child: I got another barracuda.

Dominique McLean: Kids can show their knowledge about it.

Child: That's not a barracuda.

Amanda Terenzi: That toy stood out. There were so much to the animals that, I don't know, it was exciting. It was exciting just seeing what the children would do with that.

Jeff Trawick-Smith: I believe that replica play is a bit more symbolic than other forms of make-believe or pretend play. I think that when children are playing with these toys, they have to do something beyond just becoming a make-believe character themselves. They actually have to project themselves into a little person or the driver of a car. And so this takes what some researchers call a "greater symbolic leap" from reality to the make-believe play theme.

Julia DeLapp: Animals was the highest-scoring toy for both boys and girls. It was the highest scoring toy among Latino children, and it was one of the highest scoring toys among Caucasian children. It also performed well for children from all socioeconomic backgrounds. So it really was a toy that did well for all children.

Implications for Preschool Classrooms

Jeff Trawick-Smith: The findings of this study will inform teachers who are making important decisions about the toys to include in their preschool classrooms. This year, I think one implication is that teachers might think about including some of these replica play toys, and observing and supporting children's play with them.

Dominique McLean: I think it's important to have a variety of materials, not just include one type, so that it can help children of all learning, types of learning. Include materials that would help students engage in high thinking and creativity with toys.

Nicole Green: I just saw so many important life skills that were being taught as students were playing with each other, and I think that those need to be fostered even as they get a little older.

Amanda Terenzi: There's so much to impact their play, whether it be the teachers coming in, other children. When the children were able to play without any interference, that's when they were really able to express themselves fully.

Stefanie Dominguez: Pay attention to what your children are interested in and what their abilities are, because different toys bring out different aspects of a child's learning. So they may

really encourage kids to be creative and try something new, or really help kids to learn how to problem-solve and to learn how to fit things together.

Julia DeLapp: Every year the TIMPANI study really helps us understand the importance of observing what children are doing. That careful observation of how children play with toys, seeing which toys are inspiring the highest quality play—that’s the work of preschool teachers.