



Transcript for the [video](#):
TIMPANI Toy Study 2018

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Julia DeLapp, Principal Investigator: We know that children do most of their learning during play, so it's critical for researchers, teachers, and families to observe children as they play to better understand what it is that they're learning. We also know that most of their play is done with toys, so since 2010, we've been conducting the TIMPANI toy study.

Dr. Jeffrey Trawick-Smith, Principal Investigator: TIMPANI is an annual investigation of the impact of toys on children's play in classrooms. TIMPANI stands for Toys that Inspire Mindful Play and Nurture the Imagination.

Toy Selection

Julia DeLapp: For the past couple of years, we've been looking at how teachers introduce new play materials in their classrooms and how that affects children's play. So to continue with that, this year it was important to have toys that all had similar characteristics. So we chose eight construction toys.

Jeffrey Trawick-Smith: Construction play is a very, very important type of play that's found all over the world. It has to do with um building things with small parts. It's just an important area of play that's never been investigated.

Methods

Jeffrey Trawick-Smith: One of the goals of the TIMPANI project is to engage undergraduate researchers in real, live studies with children. This year we had four student researchers who collected data by recording children's play with toys and then actually did the coding and even the analysis of data that we had collected.

Dominique McLean, Undergraduate Student Researcher: Every toy was placed in the classroom, four different classrooms.

Allison Lundy, Undergraduate Student Researcher: And they were rotated every two weeks, and they were placed either on the carpet or on tables during center time.

Dominique McLean: Play was recorded for 30 minutes during the free play center time. And the toys were recorded for two days, and we would watch both days of footage and review and code all the video.

Morgan Winship, Undergraduate Student Researcher: We used the PQT instrument, which is the Play Quality with Toys Instrument, in order to code their level of play.

Julia DeLapp: We then calculated the average play scores for each toy and looked at whether there were significant differences across socioeconomic status, ethnicity, and gender. And then we analyzed the data to determine how well each toy inspired play across four broad categories.

Category #1: Thinking and Learning

Allison Lundy: So for thinking and learning, we were looking at if the child was curious, how engaged they were with the toy, what they would do to try to solve problems with the toy, decisions they would make while playing.

Morgan Winship: How intricate the problems were, how intricate the decisions were, how they explored the toy, the comments that they made about the toy, if there was a new concept that was stated.

Child: This time, let's make a steady state.

Morgan Winship: The toy that scored highest on Thinking and Learning was Star Flex.

Dominique McLean: The star flex are star-shaped, bendable pieces that have slits in the ends of each of them so they can connect together.

Allison Lundy: Children were curious about that and trying to problem-solve in order to put it together. It was very open-ended, so the children had to think of different ways to use it.

Child: Vroom, vroom

Morgan Winship: At one point there was a race car, and they drove it. They made a road for the racecar. The child that made the racecar needed to model how to make the racecar to the other children.

Child: I'm going to show you how you make it. It's really tricky.

Julia DeLapp: Star Flex was the highest-scoring toy among Caucasian children and among children from higher socioeconomic status.

Category #2: Social Interaction

Allison Lundy: So for social interaction, we were looking for children working together, playing together, either cooperatively or like associative or parallel play.

Dominique McLean: Whether they're engaging in solitary play, or if they're engaging in more collaborative play with their peers. We're also looking at the frequency of interactions with their peers as well.

Child 1: Where's the brother? I'm doing a big tower.

Child 2: Right here.

Morgan Winship: We're looking at how they're interacting, how positive and negative these interactions are.

Dominique McLean: So the Bottle Clix scored the highest in the Social Interaction area. The Bottle Clix were bottle-shaped pieces that children can stack up, or they can connect them side-to-side in a variety of different ways.

Child: It's getting more longer, Matthew!

Allison Lundy: You would see them working together trying to stack the Bottle Clix as high as they could.

Morgan Winship: That was a huge problem that they had, how they were going to get high enough in order to stack them, because the Bottle Clix were higher than them, and there were times where they needed a lot of help and needed to interact with each other in order to stack the Bottle Clix on such a high point.

Julia DeLapp: The Bottle Clix also inspired some really interesting play narratives.

Child 1: Let's make the coolest guitar ever!

Child 2: Guitar, guitar...

Dominique McLean: I think it scored highest in this category because the children were able to share them and kind of collaborate and kind of discuss what they were building with their peers as they were playing with it.

Child 1: Are you ready, Nelson? One, two, three, blastoff!

Child 2: One, two, three, blastoff!

Julia DeLapp: Bottle clix was also the highest-scoring toy among Latino children.

Child 3: One, two, three, blastoff!

Category #3: Creativity and Imagination

Dominique McLean: In the creativity and imagination subscale, we're looking for how creative the children are while they're playing with a toy. If they're using it in novel ways, if the children are transforming the toy into different things.

Child: Lay down. Lay down. Lay down.

Morgan Winship: We were looking at how the children were able to express themselves through the toy, when they were able to connect it to something from their home life. We also looked at the narrative that they made with the toys, and how elaborate the narratives were.

Allison Lundy: So Star Flex scored the highest in Creativity and Imagination. It's open-ended, so the children had to really come up with ways to transform the object into something else.

Dominique McLean: They kind of connected it in an intricate way that I thought was very outside-the-box, and it was very imaginative.

Child 1: I have an idea, Hunter!

Child 2: What?

Child 1: Let's play Mater and McQueen! Let's play Monster Truck McQueen and Monster Truck Mater. I'll be Monster Truck McQueen and you be Monster Truck Mater!

Julia DeLapp: Interestingly, although the Star Flex inspired really high-quality play, it was one of the toys that was played with the least frequently – children just didn't choose to play with it as often as other toys.

Category #4: Verbalization

Child: You can make a phone with this. Hello?

Allison Lundy: So with verbalization we were looking at how often the child talks with the toy or speaking about the toy, talking to others with the toy.

Child: Let's go build a big tower. Let's go build!

Dominique McLean: If they're engaging in reciprocal conversations and the amount and intensity of what they're saying as they're playing with the toy.

Child 1: I made it!

Child 2: Good job – you made a tree.

Morgan Winship: Any utterances the children make with the toy. It could be comments about the toy, or it could just be noises that they make that are assisting them in a narrative.

Child: Upside down. No, no, no, no. There. Whoaaaaaa!

Allison Lundy: So Blocks scored the highest for Verbalization. They were colorful table blocks.

Morgan Winship: They have triangular prisms, squares, rectangles, cylinders, semi-circles.

Child: Who wants to come at my house?

Allison Lundy: Children would talk to one another about what they made, or work together to try to add on to what they made, so that required reciprocal conversations.

Child 1: Oh, you did not make a door.

Child 2: Well, my house don't need a door, 'cuz you can just come right in.

Dominique McLean: They would kind of verbalize about the different shapes that they were seeing and kind of talk a lot with their peers as well as their teachers about what they're building.

Child 1: We're making a big one. We're making a big house so you can live.

Child 2: This is my mom.

Child 1: Ok. Ok, here's for some hay. Some hay.

Child 2: Oh, thank you!

Jeffrey Trawick-Smith: Blocks inspired high quality play for children of both low, middle, and high socioeconomic status.

2018 TIMPANI Toy

Julia DeLapp: The results were very close – probably the closest we've seen, with so many toys scoring at a very similar level. And that's really not surprising since they were all construction toys. But there was one toy that had slightly higher play scores than the others, and it had some other characteristics that set it apart. The 2018 TIMPANI Toy is Bottle Clix.

Child: I'm making a microphone.

Jeffrey Trawick-Smith: They inspired a great deal more social interaction. The children would often have to kind of help each other, one child studying the construction that was being built, and the other adding new pieces. They also involve small parts, so that children need to kind of coordinate their activities with peers as they're building with them.

Allison Lundy: It also provided children the opportunity to express themselves open-endedly through object transformations and play narratives.

Child: [singing] Don't you know about the bird? Everyone knows the bird's the word.

Morgan Winship: We saw so much social interaction with it and so much collaboration.

Child: We're going to crash, guys!

Dominique McLean: I think it also kind of elicited high-quality play among different socioeconomic backgrounds, as well as different genders and ethnicities.

Jeffrey Trawick-Smith: They are very basic toys. We've found that in other years, toys that are quite simple and basic can be used in multiple ways do very, very well.

Julia DeLapp: That may be why Bottle Clix maintained children's interest over time. With many toys, we see high quality play the first day that it's in the classroom, but then the play quality wanes over time. But with Bottle Clix, we actually saw an improvement in play quality the longer it was in the classroom.

Implications

Julia DeLapp: We're still looking at how those toy introductions are affecting children's play, and we hope to have interesting results on that next year. But in the meantime, this year's findings reiterates something we've learned in previous years: Every child responds differently to different toys. And it's crucial to be able to observe how children respond to the toys that are available to them, so that you can understand if they're meeting their needs and inspiring high-quality play.

Dominique McLean: Simplistic toys, even though they might not look like they would engage children, it can elicit a high-quality play in the classroom.

Jeffrey Trawick-Smith: You never know which toys are going to work best in terms of inspiring play. There needs to be some careful observation as you're looking at the effects of toys, as you're selecting toys for your classroom.

Allison Lundy: It shows that it's important to recognize that there are strengths and weaknesses for different toys. And you have to really try out a toy in the classroom before deciding whether or not it would be beneficial for the kids.

Morgan Winship: I think when we look at our data and socioeconomic status and ethnicity in relation to the toy scores, it really shows teachers that you need to have a variety of toys in order to elicit the best types of play in children of different backgrounds.

Jeffrey Trawick-Smith: The other thing I would say is once again, construction play toys—and in particular, those that are somewhat simpler and more basic—tend to be pretty powerful in inspiring children's play.

Child: This is your microphone. Sing along, Hayden! I, O, let's go!