

Nick Colangelo: Kathryn Hirsh-Pasek is a professor in the department of psychology at Temple University and senior fellow at the Brookings Institute. Kathy is the author of 11 books and over 150 professional articles focusing on early childhood, infant development, and the vital role of play in learning. Her book, *Einstein Never Used Flashcards*, won the prestigious Books for Better Life Award. Her newest book is titled, *Becoming Brilliant: What Science Tells Us About Raising Successful Children*.

The Window is brought to you by the Belin-Blank Centre, part of the college of education at the University of Iowa. I am your host Nick Colangelo.

Kathy, welcome to The Window. Could you please describe your own childhood and maybe some of your early schooling experiences and how these informed your own professional work?

Kathryn H-P. : Oh, sure. Well, first of all, Nick, I want to thank you so much for including me today. It is such an honour to be here.

Nick Colangelo: Great.

Kathryn H-P. : So my own childhood was a heck of a lot of fun. My parents seemed to know that playing around was really important. I believe that I developed this kind of creative stance because honestly they supported it. They let me mess around and do things and develop things that had never been developed before. My own schooling was pretty traditional. I went to a public school the entire way through. I grew up in a mid-sized town, Harrisburg, Pennsylvania. It was a place where we knew what was going on with government and policy, but at the same time, we had our own life and our own world that was very much a part of what we were doing. That included going to the movies and making sure that you had good birthday parties and invited all of your friends to play. So that's what my childhood was like. Parents who stayed together and supported their kid.

Nick Colangelo: In your work, Kathy, you make a very simple but powerful statement in that you say play equals learning. So can you talk about that? What you mean by play and how it is so intricate to the idea of learning?

Kathryn H-P. : Sure. One of the best lines I heard recently or maybe stole recently was that play is kind of constrained tinkering. It's a way in which you learn about whether it's mud or whether it's what we do in science, we're sort of playing around with it. We're trying to figure out how things work. Of course, for young children, we have the opportunity to figure out how the whole world works. When we're babies, we have to learn that corners come together and that you can't pass through the walls. When we see patterns, that they're going to recur, that there are certain sounds that are higher than other sounds, but we wouldn't know that if we hadn't played around with sounds or blown into those bottles with water.

So for me, the world is a grand experiment. My colleague, Alison Gopnik and her team always called it scientists in the crib. We're scientists in the crib and beyond. I think the way that we engage with the world and learn about it is by playing, by constrained tinkering.

Nick Colangelo: You talk about children as active learners. I think if parents, if teachers could fully grasp what that means, that they probably would change some of their behaviours in how they see childhood and early learning. Can you talk about what it means to understand that a child is truly an active learner?

Kathryn H-P. : Sure I can. Thank you for asking that question. I think there are a couple ways in which we can sort of think about our kids. One of them is to think of our children as empty vessels. Our job in the world is to fill those empty vessels with as much information as is possible. The other way of thinking about our children is that they are active explorers in the world. They are the constrained tinkers who are learning about the world with our help. We help to engineer as it were the experiences that they're going to have when they're younger, but then they have to do the uptake. They have to learn while they go and while they play.

So let's take those two models. I think the world has come a long way with the empty vessel model. Most of our schools, for example, are built on the empty vessel model where the teacher is the grand dispenser of knowledge and the job is to fill the children with facts. Of course, we are told that information is doubling every two and a half years. So even if I could put everything we know in the world today into a child's head, in two and a half years that would be down to 50%. Of course, it becomes a diminishing quantity as we go forth. So our best bet today is to help kids learn some of the basics, but also learn how to learn. That really involves our other metaphor.

How can kids get their own knowledge by being active explorers in the world and being the agents of their own learning? I think the dispenser model through the research that all of us do at the universities is largely, I won't say dead, but it's dying. That the model where you have active learners and flipped classrooms and constrained tinkers is starting to take hold and is certainly consistent with the psychological literature.

Nick Colangelo: I can see where some parents when they hear the message that it's important for children to play, give them the room to play, may feel like well I have no role or a very limited role, but that doesn't come across in your research and work. So can you talk a bit about the role of parents and teachers in terms of play?

Kathryn H-P. : Yes. We actually think of play in a sort of bifurcated way, two kinds of play. One is free play. That's what we're used to seeing in play. So we sometimes even put the word just in front of it. They're just playing as if play has no intrinsic value. Even when we're just playing, we are being those explorers and experimenters who are learning constantly about the world around us.

However, when you have a particular goal in mind, whether it's learning about spatial arrangements through blocks or whether it's learning about early [inaudible 00:08:01] in mathematics or it's learning vocabulary words or it's learning about stories and how stories are constructed, then free play often won't do the trick. What you need to have is some constraint. You have to have some way of getting from where you are to the goal.

Now, the world's way of thinking about that is often to then say we need direct instruction. We need to fill them up with what we want them to know. There are places where you need to just tell people. Don't touch the stove. Five times five is 25. But there are others where we can engineer the environment and be the coaches rather than the directors in that environment to help children learn, but where the kids take their own initiative. We call that guided play.

So let me give you some examples so that this becomes really clear. A children's museum is a guided play environment. The exhibits are well thought out. The children then get to be the agents of their own action within those well thought out exhibits, helping them get to the learning goal. Montessori classrooms. Maria Montessori was a genius at what I now call guided play, because she recognised that by building these activities in certain ways it makes it more likely than not that a young children will get to the learning goal. When we ask our children open ended questions not what is the right answer, but how do you think this works, we're constantly inching our children toward the goal that we have in mind for them. So that constrained tinkering guided play, we think, is an optimal way for young children to learn.

Nick Colangelo: I like that, because you are very clear that the importance of the role of parents, of teachers, but you're also very clear that it needs to be based on some different assumptions about the idea of active learner. Also as you mentioned, the classroom is in the neighbourhoods. It's well beyond the school building.

Kathryn H-P. : Yes. Exactly. I think in our book, *Becoming Brilliant*, we talk about how really this is going to be a breakthrough for people to reimagine what education can be. If we take the traditional view as education is how you do in reading, writing, and math tests, and we say is that really what you want for your kids or do you want to much more? Maybe what we really want for our kids in a 21st century view of learning is that we want happy, healthy thinking, caring, so not leaving the thinking out, caring, social kids who are going to grow up to be collaborative, know how to work in teams, which the workplace tells us we need. We're going to know how to be critical thinkers. We're going to have that content. We're also going to be prepared to be the creators and the responsible citizens of tomorrow.

Now, if that's what we want for our children, then just drilling and killing them to get the answers on a spit back test is not going to do it. We're going to need to have real learning and understand that our kids have real value, agency, and discovery.

Nick Colangelo: Well, why do you think, Kathy, there is so much drill for skill going on in our schools? Is this something fairly new? Have we just lost sight of some of the things that we perhaps believed in a few years ago?

Kathryn H-P. : Well, what a great question. You probably are the real expert in this, but I do think things changed when no child left behind came into the American school system. We saw the same trend in Britain and in other countries around the world. There is an achievement gap. That gap is very real between those who are more well off and their lower income peers for lots of reasons. Whether it's on some of the things that children can be exposed to in home environments or also what goes on in school environments, our goal became to close the achievement gap. I'm not sure we can even close it. It may be that narrowing the achievement gap is a better metaphor.

But as we zoomed in on this achievement gap that has been fairly stable since 1975, since we read pieces that came from the government called A Nation At Risk, I think we tended to focus on those things we could do quickly and within the political schedule not necessarily the human schedule, the human development schedule. So it's easy for me to teach the letters of the alphabet. It's easy for me to have you memorise your multiplication tables. It's harder for me to teach you how to be a critical thinker and a creative innovator. So I think we got stuck on accountability and accountability then ruled the day for what was going to go on in our school systems.

Frankly, the fear welled up so great that we even saw it hit the toy industry and we had a new kind of toy called an educational toy. Parents got worried that if they didn't start that training early enough, and I mean early, some even in the womb with devices that you can buy to make your foetus smarter, then we were going to have a kid who was left behind not able to go to the great schools, not able to get the jobs as CEOs, or to be the entrepreneurs. So it's gotten very out of hand. At this point, I'd have to say that our view of how to educate is quite divorced from what educators and psychologists and those who study the science of learning think is an optimal way to proceed.

Nick Colangelo: So much of your research and work, I see it as trying to unhandcuff, to free parents and teachers. Before you wrote Becoming Brilliant, you had a book out called Einstein Never Used Flashcards, which the title tells you right away, and you talk about parents being subject to this learning industry and that it really puts pressure on them, makes them nervous. Can you talk a bit more about what this learning industry is and how it really impinges on parents' confidence as parents?

Kathryn H-P. : Oh, sure. Well, look, for one as parents we are many of us, well I mean I'm not, but parents today are millennials. They've been surrounded by gadgets and gizmos and instant products. They know how to manage at a very individualistic level. With all this information in your hand and assuming that parent is managerial, what we want to do is create the very best opportunities for our

kids that we can. Frankly, I don't blame them. I have yet to meet a parent who doesn't want to do what's best for his or her child.

So the question really becomes is the managerial way where all of the baby analytics the best way to grow a child or does that essentially rob a child from the child's own inner personality, inner agency? I would add even rob the parent of being able to enjoy parenting. So let's just look at what has happened in this industrial complex. There are roughly 100,000, just let me repeat that, 100,000 apps for the preschool set that are available at the Apple iTunes store. Now, tell me how parents are supposed to sift through over 100,000 apps for their little people all designed to help your child become smarter.

We could even go earlier than that. I was witness to a wonderful set of CDs, DVDs that you could but that were separately formed for the left brain and the right brain. Yet, it doesn't jive with the science at all. A Kathy favourite is your baby can read. To which I always answer, no she cannot. Your baby cannot read. In fact, Susan Newman did a study just to see if your baby can read packages actually made a difference for young kids, and, of course, the answer was it didn't because your baby can't read even though the inventor came up with a product that sells millions and millions and millions of copies around the world.

My two new favourites are that you can actually buy a porta potty that has an iPad in it. The iPad is right up front and you can even have an app that you can download on the iPad so that you can outsource potty training. Of course, while the child's trying, the child can learn the alphabet and can learn to count. Now, get ready for my absolute favourite is that there's a new tampon device. You insert the tampon device while you are pregnant and it has a speaker on the end and you can help teach your foetus all the things you think it needs to know when the baby is first going to be born.

Nick Colangelo: Kathy, I don't think there's anything I could say that would make things clearer. You certainly have my mind focused on the 100,000 apps.

Kathryn H-P. : Like really? Really, Nick?

Nick Colangelo: Yeah. Let me follow with this because you also make a statement about helicopter parents. Parents who hover literally near their kids and who are highly involved in the lives of their children. What you say is the statement behind being a helicopter parent is you can't succeed without my intervention. How do you get a parent to change that message?

Kathryn H-P. : Well, I think, the way we've tried at least is to say hey parents guess what. You don't need to be a helicopter parent. Your child, your young child, even your two and three month old child knows so much about the world he and she lives in. If you can notice what they notice and comment on it, if you can have a rich interaction in a conversation, that will help build the language, which is predictive of everything else your child is going to learn. So relax a little,

because what you're doing is co-opting them. It's teaching them that they can't do it themselves. The message I think we want for all our children is hey kids be the creative thinkers we know that you can be. We believe in you.

Nick Colangelo: When I was in elementary school, my favourite subject, and I think my area of talent, was recess. In your research, you're showing quite a trend that over the last so many years, the amount of recess time in our elementary schools is really diminishing.

Kathryn H-P. : Yeah.

Nick Colangelo: What do you think is happening? What message would you like to give to teachers and parents about this?

Kathryn H-P. : Well, a lot of messages actually. We have witnessed art time going down. We have witnessed in the alliance for childhood study that looked at schools in Los Angeles and New York that choice time, children don't get choice time anymore. As these have gone down, and as the sand tables had been removed and the blocks have been removed, which by the way helped build stem learning, what we've seen in its place is test prep. The teachers know that's not what the children need. The parents largely know that it's not what the children need. But I think we're kind of stuck into the wrong view of education.

In our book, *Becoming Brilliant*, we suggest that if you really want to have that child who is a collaborative child who gets along and works in teams, a child who has good communication skills, a child who knows his content and knows how to learn how to learn, a child who's a critical thinker, a creative innovator, and who has the confidence and the grit to take risks and to learn from failure, that that child is the one who's going to be the responsible, successful citizen of tomorrow. Any parent we tell nods their head and goes yeah. That's what I want. I want a critical thinker, a creative innovator, somebody who gets along with other human beings, and who knows his content.

So the question is really how we get there. In our book, *Becoming Brilliant*, we offer a rubric, which we hope will help teachers and we hope will help parents and we hope translates right back into that recess time, Nick, that you and I loved so much. Why is the kids need to be good collaborators and learn from others? When we live in a world where the x-ray that they take in Iowa is going to be read later that night in India or in Israel or in Sydney, Australia, collaboration, communication. Having the conversations with our children when we're within our children. Those conversations grow into rich language and world knowledge. Then will support the third C, which is content. Because without having that rich world knowledge and content, you're never going to be a good reader. You're never going to learn the mathematics that we need to know. The 123s or even the more formal algebra or decimals.

After content, critical thinking, knowing how to sift away from all of the information that is going on the web today and to sift through it and find just what you need to know. How do you use evidence to back up the information? What counts as good evidence and what counts as bad? Creative innovation. You actually have to know something to be creative. The most creative people spent 10 years being experts in their field to get there so that they can develop something really new.

Finally, the last C, which is the confidence to give it a try. When we are all so always directing our children and not letting them ever try and not letting them ever fail, they have a weird kind of mindset that they always have to colour within the lines and that their ideas aren't worth anything because we've stolen it from them and we direct them. I think we can change all that and the six Cs offer a way to do that and to help our children become the real successes that they deserve.

Nick Colangelo: Kathy, you spoke earlier about the importance of free play, guided play. There are a number of single parents out there, low income parents. I'm wondering in terms of they're stressed for time and resources, how can this importance of guided play and free play also work into those situations?

Kathryn H-P. : Well, thank you again for asking. The truth is that it actually fits into your schedule really well. You don't have to spend the time with the flashcards. You can put them away and go out and enjoy the neighbourhood park. So let's just go to a park for a moment. When your child is playing with another child or even playing with you in that moment in the park, they're learning collaboration. They're communicating as you're walking to or through the park to the grocery store. They're learning content when they're in that grocery store. How many boxes of macaroni do you need to buy? How much does the set of apples that you just put in your bag weigh? Where is the frozen vegetable section? How much milk do I need to buy and what will it cost? You're learning content. You're learning where to look. You're learning how to learn.

Critical thinking. What's the evidence? What's the best stuff you can buy in that supermarket? How do we continue the conversation about the best fruit? How do you know how to pick it? How do you know whether the milk has gone bad? What's the evidence that you bring to bear? Critical thinking right there in your corner store. Right there in your local supermarket or your market that's opened up down the street.

How about creative innovation? Can we make something new with these foods? Can we take them home? Is there a new way to do the laundry? Creative innovation. How do I take a risk and try something new? If it's a new food that I'm going to eat at home, maybe you want to mix peanut butter in your vanilla pudding. May not sound good to me, but maybe you're inventing a new food.

So I think we can do this in our every day moments. We did a study in a supermarket where we simply prompted conversation. Sometimes the signs

were up. They would say things like I'm a delicious apple. Can you find other kinds of apples? Sometimes the signs were down. Parents who had to go to that corner store, had to go to that supermarket anyway spoke more with their children when the signs were up than when the signs were down. So simple intervention can make a huge difference.

We're now doing things where we're transforming bus stops in a project that we call urban think scape. Why not have puzzles on the bus stops that you build as part of the bench? Why not have games that are right there so that while you're waiting whether it's in a hospital clinic or whether it's in a bus stop or whether it's on a sidewalk on your way to school have games that you can play that help build learning?

Nick Colangelo: What a great message to parents that some of the most vibrant classrooms are right out there wherever you walk, wherever you happen to shop. I think that's a great message to give people. Someone that you do know, author Carl Honore, wrote about In Praise of Slowness. You know?

Kathryn H-P. : Yes.

Nick Colangelo: His concern about there's so much time pressure and everybody's going faster and so forth. In a particular field in schools known as gifted education, there's quite a bit written about the importance of acceleration where some students are just kind of bored. They're ready to move on. So acceleration seems to be very workable. How does this fit into your thinking about play and speed?

Kathryn H-P. : Sure. Well, I mean, I think that we do want to make sure that children have and notice the opportunities that are around them and the learning moments that exist around them. So when we talk about acceleration in a gifted programme, I'm all for that. But I think that it doesn't mean filling a child's time constantly. It means allowing them to reflect on some of the things they discover when they're bored.

Now, I'm friends with Carl and I love his title. I do think we move too fast whether it's fast food, which is less healthy, or fast learning, which doesn't get at learning to learn but rather at shallow learning. But I would want to write a book someday or maybe a blog some day called In Praise of Boredom. I'm not just in praise of slow. We don't have enough time to be bored anymore. We don't even half enough time to browse anymore. I was talking to somebody over the weekend. You know, when all of the advertisements for books come up right on your screen and your screen knows exactly what you liked and what food you bought last time, then you never get a chance to try or experiment with anything new, because you're just seeing your patterns reflected in the cookies that come up on your machine or on your phone. I think we need more time to browse, more time to be bored, and therefore more time to explore and experiment on our own. The world is our petri dish.

Nick Colangelo: One final question, Kathy. You are the mother of three sons. I know that you have learned a lot from them. They've meant a lot to you.

Kathryn H-P. : Oh, yeah.

Nick Colangelo: Recently your son Benj, who is a composer and lyricist and singer, won an Academy Award for the song City of Stars in the movie La La Land.

Kathryn H-P. : Yeah.

Nick Colangelo: In his acceptance speech, Ben indicated or dedicated his award to all the kids who sing in the rain and all the moms who let them. Clearly that was a nod to you mom. Can you tell me how did that feel hearing that dedication from your own son?

Kathryn H-P. : It was an out-of-body experience. It really was. You know, sometimes they just get it, and Benj so gets it. So do his brothers. His oldest brother Josh is a professor at University of Michigan. He and my daughter-in-law Laura had baby Ellie's birthday party yesterday. I was so proud of what they did for baby Ellie, because they let her play. She built forts. She worked with crayons and she smooshed cake and it was all over her mouth. The whole time, she was not just learning but having a great time and recognising that it's those moments. Those are the special moments. My son Mikey, they all know, all three of them grew up playing. Mikey's getting his PhD in social psychology. Josh is profing. Benj is writing. So I have to say at this point I can look back at is all and say play seems to work.

Again, I want to be clear that in our studies, while I totally embrace free play, if you have a learning goal in mind, just setting kids out in the woods won't do it. We need to do the constrained tinkering where we let them have the agency to go out and do something in their world and we are the coaches helping them get that ball in the goal.

Nick Colangelo: Kathy, I want to sincerely thank you for being such an advocate for the souls of children, for the souls of parents, and for the souls of teachers. Thank you for taking time to be with me on The Window. It's been a pleasure.

Kathryn H-P. : Been a pleasure for me too. Thanks, Nick.

Nick Colangelo: The Window is presented by the Connie Belin and Jacqueline Blank International Centre for Gifted Education and Talent Development part of the College of Education at the University of Iowa. The Belin-Blank Centre is directed by Dr. Susan Assouline. The Window is produced by David Gould and Joshua Jacobs. Music for The Window was composed and performed by Daniel [Gaglione 00:33:47] and John Rapson.

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