

## The Importance of Play in Learning

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**WE'VE TAKEN PLAY OUT OF THE CURRICULUM, BUT IT NEEDS TO GO BACK. I THINK THAT APPLIES TREMENDOUSLY TO THE ARTS. THE ARTS, IN MANY SENSES, ARE ABOUT PLAYING WITH IDEAS TO THE POINT WHERE YOU WANT TO EXPRESS THEM, PERHAPS EVEN TO AUDIENCES. MAYBE YOU WANT TO EXPRESS THEM IN YOUR BACKYARD FOR YOUR NEIGHBORS, OR EXPRESS THEM ON YOUR OFFICE WALL FOR YOURSELF. BUT IF YOU HAVEN'T PLAYED WITH THE IDEAS, YOUR PRODUCT PROBABLY ISN'T FINISHED.**

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**JAMES CATTERALL:** *Another theory that I apply in my work, and intend to pursue further in my work, is what I call my theory of the importance of play. I was asked to attend a seminar at UCLA and to do a presentation on my work. Sitting around a table were the president of the Saulk Institute, who has a Nobel in medicine; a chemistry professor, Robert Winter, who is pretty legendary in mathematics at UCLA; a psychologist who writes about creativity; and myself. The chemistry professor talked about the chemistry of color, and the aesthetics of color in relationship to chemistry. The person with the Nobel had retired and displayed four computer-generated works of art. The psychologist talked about creativity, Winter talked about music, and it was fabulous. In the discussion afterwards—and here's what I took away as vitally important—we all agree that*

*the scientists in that room had made time to play with their ideas. And that seems to me a necessary part of a scientific career, or any career, or any pursuit—leaving some open space for reflection. A scientist plays with ideas, creates theories, rearranges things, introduces new pieces to the puzzles, goes back to the lab and tests them, knows more, creates additional puzzles, goes back to the playroom—the schpielraum, as Ira Glass of Public Radio in Chicago puts it. I said that word to a German friend at home, “Schpielraum, ‘playroom,’ right?” “Oh no, wrong,” he said, “Schpielraum is pause.” But that's just it: you've got to pause and play with what you're thinking about in order to accomplish and to create new things. So this idea of play is important, especially in music. Being a musician is not simply a matter of sitting down before a sheet of paper and a score, but also of playing, experimenting, improvising. And when you do that, your skills as a musician undoubtedly deepen. Play is extremely important.*

*But what do we do in the curriculum in the schools? For the most part, we lop off the entire body of things we consider as play. Of course music is play, the arts are play; so they are among the first to go. Likewise, in the science curriculum, we cut out the essential play at the heart of it. Typical school science is what my colleagues call “final form science” in the curriculum. You learn the dates, you learn the resulting equations, you learn about the microscope's invention. You have this chronological history with a few things selected. The play is gone. We do not encourage children to simply play with ideas, because we haven't got time, we've got to get to page 368 by June 1st or the principal is going to fire us, or the next grade teacher is going to say we didn't teach someone right, because they haven't got the knowledge base. We've taken play out of the curriculum, but it needs to go back. I think that applies tremendously to the arts. The arts, in many senses, are about playing with ideas to the point where you want to express them, perhaps even to audiences. Maybe you want to express them in your backyard for*

your neighbors, or express them on your office wall for yourself. But if you haven't played with the ideas, your product probably isn't finished.

**Discussion**

**GAIL BURNAFORD, NORTHWESTERN UNIVERSITY:**

*[In our lunchtime discussion] we began with a discussion of play, and what that meant in terms of our various projects. But we'd love to hear more of what you think.*

**JAMES CATTERALL:** *Albert Einstein was interviewed in 1945 as part of a book probing mathematical ways of thinking. And Einstein said, "The way I do it is I visualize a structure in my imagination, maybe it's complex, maybe it's simple. And I rotate it, and I put different combinations together. And I can sit all day doing this." That's Einstein playing with ideas—playing with loose structures, playing with inventive structures—and that is why we have knowledge or beliefs about relativity. As far as musicians are concerned, well, Eric mentioned the violist who gets to Juilliard after fourteen years of four hours of practice a day and four hours a day of reading scores, playing things until they got them down, until their fingers were totally callused, and they hate music. But they've never had an opportunity to play with music! They've never gone off and said, "I'm going to take two hours and sit on a rock over the Grand Canyon and improvise." And you tell me if I'm wrong—musicians who would take time to do that would be better musicians.*

**BURNAFORD:** *In the Ravinia program, we have classically Western European trained musicians, and we have jazz, blues and folk artists. Their vocabularies often don't come together, and yet they both work with our young people in schools. Some are highly improvisation-oriented, and others are not at all improvisation-oriented. What is the language of music, then, that translates, and how can we work with this rich collection of artists in ways that make sense? They have trouble speaking across the caverns, and it's up to us to design programs that help them as artists communicate with children and each other.*

**LARRY SCRIPP, NEW ENGLAND CONSERVATORY:** *If I remember James' talk, play was linked very closely with reflection. Why did you choose to separate those two, or did you, in your conversation? It seemed like if the dynamic was play and reflection, then the play could be in the reflection.*

**CATTERALL:** *The play could be in the reflection. But not necessarily.*

**LOLITA MAYADAS, NATIONAL GUILD OF COMMUNITY SCHOOLS FOR THE ARTS:** *Actually, we did talk about play as a part of reflection; in fact, we started with that. Then we went on to reflection leading to improvisation, and then about improvisation being play. We went round the circle. Then we talked about how different cultures— and this is what Peter Row (New England Conservatory) brought up with Indian music or jazz—how different people learn as a part of improvisation. If you don't go into that arena of play and reflection, you lose a whole spectrum of knowledge as a result.*

**CATTERALL:** *Let me give you an example of play that is not on the table, and that is someone who has been trained fairly classically in chemistry and someone who has been trained fairly classically in physics. Maybe within those curricula there was room for play with ideas and creativity, but something inspires this person at some age to say, "Wait a minute, I think there's some connections here. And I've got images and structures in chemistry and images and structures in physics that I want to play with. And I don't know what the answer is, but if I try different configurations, three-dimensional, two-dimensional, or in the case of one or two or three people on the planet, four-dimensional, I come up with new structures. But I've got to have time to sit – I've got to have the luxury, the motivation, the inclination to get with that play agenda, to be in that space."*

**COMMENT:** *I also think that when you ask people to reflect, it's almost intimidating. I did not interpret what James said as being reflection. Reflection seems much more intentional to me. We didn't get into this partic-*

ular discussion at our table, but play is much freer, I think. And I think reflection emerges out of the play, and insight in understanding.

**SCRIPP:** *So that's the difference, degree of intentionality.*

**CATTERALL:** *The other difference is, play is fun and it makes a discipline fun, or connecting disciplines fun, or learning fun. And if reflection is the teacher saying, "Get out your journals and reflect on what I just told you," that ain't necessarily fun.*

**JEAN STACKHOUSE, NEW ENGLAND CONSERVATORY:** *I think there is a kind of reflection that is very much involved what you are calling play. People have to think in games and sports, in the midst of the action. Or think of making something, say, building a fence. It's not working, so then they try this, they try that, and don't stop. They are experimenting in action. It is the same when folks practice a classical piece. They are not really improvising; they are trying this pattern and that fingering, and they are doing it all at once. That is a kind of reflection in action, a very powerful way in which people learn; professionals do it especially well. Watch a kid attempting to catch a ball. Musicians may or may not spend time doing this, but they do much the same thing in what they do—reflect in action. If we do not recognize this dynamic of learning, we lose a major part of the spectrum of how knowledge comes into being.*

**MAYADAS:** *Just one p.s. to that. One thing we did discuss at the table was that we've not been teaching kids to think that way very often. So often they'll say, this is what my teacher told me to do, and they will do it. For instance, most often they don't try different fingerings at an instrument. They will do the fingerings their teacher asked them to do.*

**MARTIN GARDINER, BROWN UNIVERSITY:** *I think we keep wandering from what music is all about. There is something especially interesting about the chemistry of music when it is good—when you're not burned out, when you're actually making music—which involves some very interesting dialogue between*

*doing and observing, and at such a time you don't have time to really reflect, if reflect means stepping back from the activity: that has to wait until later. Whatever is happening is almost magical, in the sense that when it is happening you say, "My gosh, this is great, I hope it continues." I think all of us who have done music have had that experience and know what I'm talking about. Music, then, is something that can be very special, and we must be careful to honor its wonders as we think about it.*

**CATTERALL:** *When you're in that zone, it's flow. You're not thinking fingering, you're not thinking anything. You are living a beautiful piece of your life. ¶*

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