Erik Strommen

Introduction

Ladies and gentlemen, I come to you today in defense of children's play. Play is critical to mental growth and development. We have decades of studies from dozens of cultures demonstrating its value for children's social and cognitive growth. We have good data on the processes by which play fosters learning. If we combine this knowledge with technology, enabling play in both virtual and physical worlds, the opportunities to foster playful learning would seem infinite.

Yet our children's toy boxes are cluttered with devices that are not playful at all. These toys blink, chirp, and yak at children. They direct children's attention to answer questions about letters, numbers, and other educational content. They reward responses that match the curriculum, and correct those that do not. These kinds of interactions reflect a theory of learning based not on play but on instruction. They do promote a form of learning, but not the creative, experimental, collaborative kind of learning that comes from play. Being based on instructional concepts instead of on play concepts not only makes these devices inappropriate for play settings, but their very designs contradict the core elements of playful engagement. My goal today is to expose these contradictions, and hopefully start us down a new road toward rediscovering and designing for play, true play, and to make clear distinctions about the kinds of learning interactions that are consistent with playful principles and those which are not.

Let me start by setting up a dichotomy. Play and instruction are fundamentally different processes. Learning takes place in both types of interaction, but in very different ways. I want to highlight four key ways that play contrasts with instruction to prove my point.

Intrinsic vs. extrinsic motivation

First, play is intrinsically motivated but instruction is extrinsically motivated. It has often been speculated that there is an instinctual drive for children to play, as we seem to see in other higher mamma1 species. Whether this is true or not, play is clearly motivated by children's own drives to mastery, to satisfy curiosity, and to understand new ideas and experiences. Instruction, by contrast, is motivated by rewards for performance. Correct answers and high test scores are the motivation for instruction, and those goals and rewards are set by someone other than the child.

My ideas or yours

Another contrast is what I call "my ideas or yours?" A defining feature of play is its assimilative or "as if" quality, that places the child's thinking at the center of the play experience. In play, objects and events are subverted to the child's ideas and agendas. Blocks become trucks, dolls become babies, and empty lots become forts, baseball fields, whatever. Instruction is the opposite. Instruction involves accommodating oneself to ideas and tasks defined by someone else. Children's behavior in instructional contexts is structured for particular learning purposes by the curriculum, rather than created and defined by the child. Play involves children experimenting with their own ideas in their

own ways. Instruction involves using specific pedagogical methods to change children's ideas to match our own.

Process vs. product

The third critical difference between play and instruction is that in play the process or act of playing is the focus, while instruction emphasizes a product or outcome. In play, the pretending, the running and jumping, the singing is the very point. In instruction it isn't the process but the result that is the focus: Mastery of the curriculum, a score on a test, a correct answer. Instruction of course takes process into account. But my point is that the process itself is directed toward a specific end. There are no goals in playing; there are goals to instruction.

Finally, and perhaps most critically, play is strongly social while instruction tends to be individual. Play is at its best as a collective construction among players. Instruction, in contrast, is concerned with individual performance and individual mastery.

I hope you can see the outline of my argument here. The vast majority of interactive learning toys are toys that try to teach specific things. They dictate, they score, they reinforce. They are designed for one child attending solely to the toy and obediently complying with its instructions. It is worth observing that even the toy industry, feckless as it is, does not call these devices toys. They are called "electronic learning aids," or ELAs.

Eight years ago, when I helped design the first interactive plush toy, Microsoft's interactive Barney, I fully expected these ELAs to fade from the marketplace. 1996 saw the beginning of a tidal wave of original interactive toy designs that seemed to me to be the start of a toy technology revolution that would make rigidly structured instruction toys seem antique or at least outdated, as drill-and-practice instructional techniques themselves have come to be seen. I was wrong. If anything, the market for these products is growing and more and more of them are being handed to children to use in their play. How can this be?

Now the marketing folks will tell you that parents and grandparents buy ELAs for two reasons: First, because instructional learning is the only kind of learning these adults understand. The very attributes that make instruction the opposite of play are the same attributes that are easy to communicate to adults: Individualized training! Content that is clearly academic! Reinforcement for correct answers, hints for incorrect ones! Instructional toys promise results parents can understand, using methods they can understand. And in an era where anxieties about academic ability run high, these features are appealing to adults because they seem to offer academic training that can be done at home. Playful learning may be wonderful, the marketers will also tell you, and parents may even tell you they think children's play has learning value. But when selling a play-based learning toy, the toy's benefits are "hard to message." They don't lend themselves to sound bites or curriculum shorthand. "Will teach your child to read," is always stronger than "encourages exploration, creativity, and problem-solving."

I also think there are strong cultural trends at work that have led to the decline of children's play, and these same trends have led the public – and us, I fear – to diminish the attention we give and the value we place on playful interaction. Brian Sutton-Smith has eloquently described how our mobile, lonely modern society has led to the "domestication" of play. With the disappearance of stable local communities, children no longer play with neighbor children as much. They have been brought indoors to play, under adult supervision, usually with mass media or toys as their only companions. Children playing alone under adult supervision do not showcase play's qualities very well. In fact, that single child playing alone with TV or a toy as a play partner much more closely fits the individual-oriented instructional model of learning rather than the play model.

But I think there is also a more fundamental problem, one that we, as psychologists, educators, and researchers, share responsibility for. One of the reasons that marketers find the benefits of play "hard to message" is that we haven't done a good job of communicating the value of play to our students or to the public. Parents can't demand products that support playful learning when they have never been shown the value of play or educated in how to think about it. Play is very much seen as a kind of leisure activity, "fun" without substance. Our own language betrays this bias: "Stop playing around," is a way of telling someone they are wasting time. Calling something "child's play" implies that it is easy, not involving any effort, almost trivial.

Whether the diminution of play or the exaltation of academic learning is the cause, I see several dangers in bringing instructional interactions into the play room, dangers to the

integrity of both play and instruction. The threat to instruction is that these ELAs, presented as toys in a play context, teach our children that instruction is like a play scenario: They can start or stop it at will, engage lightly or deeply as they wish, even ignore instruction if they desire. Presented as part of play, instructional learning becomes just one more behavior that the child can participate in or drop out of at will, the same as pretend play or any other play activity. That is not a desirable orientation toward instruction for our children to adopt. Often in instruction, children must attend even if they would rather be doing something else. That's part of the discipline of education. Yet every day when they turn on and turn off instructional learning toys at will and move on to something they find more appealing, they learn that instructional interactions require no more commitment than they wish to invest. In play, which is driven by the child's own interests, this is a fine attitude, but it is bad for didactic instruction.

The threat to play posed by these devices is that, used as toys, they actually undercut the essential features of the play experience. Their relentless focus on performance directly contradicts the process-focus of play and their emphasis on following instructions takes away children's role in creating play scenarios on their own. In addition, children's choice of content in their play reflects issues and ideas they themselves are motivated to master and understand. The curricular content of ELAs, shaped by academic demands, bears little resemblance to the content children would choose on their own.

Okay. So far, I've focused on devices that are called toys and intended for use during play but that are really instructional in nature, intended to TEACH not PLAY with the child. That's because I wanted to be clear about the sorts of toy experiences I hope to

make disappear. But I also had an ulterior motive. The recency effect that we see in memory research suggests that you will be more likely to remember what I said LAST. And what I really want you to leave here with is a clear idea of what playful learning technologies COULD look like in the future.

To do that, I have to show you something from the past and ask you to imagine things in the future. From the past, I bring a toy. This toy is a game called Hide and Sneak. It is intended for a slightly older audience than preschoolers but it proves my point most concretely. This game requires at least two players. The hiders wear these small transmitters. The seeker uses this wand as a sort of Tricorder, like from Star Trek. With sound and lights, it helps the seeker to locate the hiders almost magically. [DEMO] I've seen this toy in use repeatedly and there is a consistent pattern of usage: First, children play a lot of hide and seek, taking turns in the roles of hider and seeker. Then, the games wind down as children begin to discuss the seeking device itself and speculate on how it works with the transmitters. They often begin spontaneously experimenting with it, seeing how far away a transmitter can be and still be detected, for example, or seeing if can go through walls, if the transmitter needs to be pointed a certain way, and so on. This toy sparks a lot of fertile interactions. A similar type of toy, deliberately designed to encourage this kind of experimentation and exploration with radio waves or IR light, would be a powerful educational tool. As a game, it invites group participation and its several pieces with different functions allow several children to work together, each literally controlling a piece of the situation. The toy, in short, creates a common context which brings the children together in a shared exploration. Children start asking their own questions and seeking the answers using their own methods in a social manner, and

it is the process of trying and finding out that is the focus, not the answer itself. I am sure you can easily imagine this kind of interaction in a more formal educational setting, with the common context being for example, data collected by a classroom. That's playful learning, just in a different setting with different content. It doesn't matter where it is; it's the play that's the thing.

So here is my thumbnail summary. When you are trying to decide if something is playful, ask yourself these questions: **Is it social?** Solitary play certainly has value, but the socially constructed nature of play really matters when our culture seems to be atomizing, and children are being isolated from one another. Kids interacting with other kids should be front and center. **Who's in charge?** If the children are the ones setting things up not just physically but conceptually, if they are showing each other what to do, collaborating, its play. If the children are being told what to do, led, directed, or tested, its not play. **And finally, process or product?** Play is about the moment, the interaction itself. Play involves spontaneity and experimentation. It isn't about seeking a particular outcome, or working toward a goal. In play, it's the journey not the destination. A concrete example: Preschoolers work fervently on their scribblings, only to walk away from the paper and never look back when they're done. At this age, drawing is a form of play. The narration of the story being portrayed, the experimentation with lines and marks, the feel of the marker or paint, is the point. The paper with all the marks on it in the end is discarded because it was the means, not the end.

I hope I have reminded you a little bit of Dev Psych 101. Play has a critical function in human development. It is a behavior we share with all other mammals whose young

have an extended neotany or juvenile period. We need to be advocates for giving children the play experiences they need. Join me in a professional quest to guard the toy box. Let's keep instruction in its place and give play its place as well. In a culture increasingly fixated on individual academic achievement at earlier and earlier ages, play gets little of the attention or respect it deserves when compared with the focus and discipline of more directive instructional methods. There was some wisdom in that old Cat Stevens lyric with its lament: I know we've come a long way, we're changing day to day, but tell me where do the children play? They should be playing everywhere they can. Technology can let us give them toys with magical properties that can draw them together and bring out the best in their fertile minds. Let's make that our goal, and put instruction in its proper place: Outside the playroom and definitely not in the toy box.