Mr. Condom

by SEYMOUR PAPERT

I recently came back from a trip to Thailand where I am working on a project to develop uses of digital technology for learning in so called "developing" countries. While there I met a remarkable educator who has provided me with what has become my favorite learning story.

He earned the title Mr. Condom (though when they are being polite he is more usually addressed as Mr. Mechai Viravaidya, Chairman of the Population and Community Development Association (PDA), by bringing a brilliant educational methodology the problem of encouraging villagers to practice birth and STD control. His procedure is this.

He goes to a village meeting, holds up a condom and asks if anyone knows what to do with it. The tension and silence is palpable. So he says: "Well, look." He unwraps the condom, puts it to his lips, and blows it up like a balloon. The tense silence is broken by a few giggles. So he continues in the same spirit . . . bouncing the balloon, blowing up another, trying to juggle . . . generally fooling around. When the crowd seems to entering the spirit of fun he hands out condoms to everyone urging them to join in the fun.

Then he goes away.

And if you look at the statistics you see that in the places where Mr. Condom has performed the birth rate has gone down.

Mr. Mechai explained to me that if he stood up there and spoke about sex, people would not listen. Besides, do-ing so would be irrelevant to the real problem. These villagers know about sex and would be perfectly capable of figuring out how to use a condom if they were not so uptight about it. What was needed was to make them have a more relaxed relationship with the thing.

Contrast his approach with what happens in many American sex education classes. Teacher draws on the board, or puts up a chart showing the plumbing of the human reproductive system. "Now this is how a condom works . . ."

The difference between Mr. Mechai and the approach of the American sex education class applies much more widely than to condoms. In fact I believe that Mr. Mechai has as much to tell us about math education as about sex education. Because if kids were not too uptight about fractions to play with them, they would find it easy to figure out how they work.

So let me tell you another story in which my then doctoral student Idit Harel did something for fractions very similar to what Mr. Mechai did for condoms.

It happened in the Hennigan School in Boston. Idit had given a fourth-grade class an assignment to make software that would teach something about fractions. The students had access to enough computers for each one to work on an individual product. They had enough time—a school period a day for most of a school year—to do a serious job. And they had enough sup-port for learning the programming skills needed to carry out their projects using Logo (LogoWriter at the time) as their programming language.

All students were expected to deal with some aspect of fractions. But they could choose which. Most chose some aspect of schoolish knowledge about manipulating fractions. But some did something very different.

Debbie's software was very different indeed. She described the insight she wanted her software to convey as "There are fractions everywhere. You can put them on top of anything." To show this she would draw a picture and show that you can find many fractions in it. She spent a lot of time doing that and programming the computer to show the result.

Now I forgot to say that before this experience Debbie was a very poor math student and when interviewed about fractions showed not only a pitiful lack of knowledge but also an extreme reluctance to apply her mind to thinking about them. After her software writing experience she scored, for the first time in her life, at a superior level on standardized school math tests.

What happened? This goes against the grain of conventional wisdom in the school world. "If you want students to score well on tests about fractions, teach them the stuff they will be tested on." From this point of view Debbie was wasting her time with the software. Just like the villagers were "wast-

ward the constructivist notions of building knowledge structures into constructionist principles which are driving children's activity in this decade.

Papert would, I suspect, consider a definition of constructionism as an oxymoronic concept. We will have to do with the banal, flat, and constrained learning by doing—especially physically making something.

> Constructionism shares constructivism's connotation of learning as "building knowledge structures" irrespective of the circumstances of the learning. It then adds the idea that this happens especially felicitously in a context where the learner is consciously engaged in constructing a public entity, whether it's a sand castle on the beach or a theory of the universe. (Papert, 1991, p. 1)

Constructionism finds a true home in a computer-rich culture and herein lies the heart of Papert's objection to current educational practice. He is not as might have appeared from *Mindstorms* anti-teacher; rather, he is against the prevailing school culture that constrains children, physically and epistemologically, in the pathway of its own liking.

In his closing address to the 1990 World Conference on Computers and Education, he appealed, in the spirit of those times as a comparison with the political structure of the then USSR, for perestroika in epistemological politics.

As Papert says:

> His [Mikhail Gorbachev] slogan of perestroika (which literally means "restructuring") became synonymous with a policy of struggling to reform a system in serious crisis without calling into question the foundations on which it was built. It should be clear by now that I see most of those who talk loudly about "restructuring" in education in much the same light—though few of them have the courage to

carry the reforms as far in their realm as Gorbachev did in his. (Papert, 1993b, p. 206)

Perhaps the computer is *The Children's Machine* and the vehicle for freeing thought.

Endnote

We end with this vision of Papert:

> Absent-minded like many driven intellectuals, Papert is said to have once realised, mid-way across the Atlantic, that he had left his wife behind in a New York airport. Colleagues report that he sometimes forgets to show up at lectures and, when he does, tends to get carried away into whatever topic fascinates him at the moment. A man of dramatic personal magnetism, he is likely to startle interviewers with juggling demonstrations at airport terminals or by stopping his car in the middle of a U-turn to formulate a thought. Papert's aphorisms, like Minsky's, tend to stick. One of his favourites is that we are to thinking as the Victorians were to sex. (Crevier, 1993, p. 86)

I will leave you to unwrap that saying of Papert's for yourselves! **(LX)**

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ing their time" (and their condoms) blowing balloons. But this conventional wisdom entirely misses the point. Neither Debbie nor the villagers were wasting time—by playing with the condom or the fraction they were taking these things into their heads. They were letting themselves think about them.

About the Author

Dr. Seymour Papert is fondly known as the "Father of Logo." He is a respected mathematician, educator and artificial intelligence pioneer. Papert's numerous honors include awards from the Software Publisher's Association and the Smithsonian Institution. Dr. Papert occupies the LEGO Professor of Learning Chair at the MIT Media Lab's Epistemology and Learning Group. Seymour Papert's books including *Mindstorms: Children, Computers and Powerful Ideas, The Children's Machine,* and *The Connected Family* are required reading for anyone interested in educational computing and the future of learning.