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Seymour Papert, 88; pioneered use of computers in education



FRED FIELD FOR THE BOSTON GLOBE/FILE 2008

Dr. Papert constructed a mobile as part of his neurotherapy at his Blue Hill, Maine, home. He had suffered a traumatic brain injury when struck by a motorcycle in Hanoi in 2006.

By Bryan Marquard | GLOBE STAFF AUGUST 03, 2016

In an age when using a smartphone is as natural as breathing for many children, it can be difficult to imagine the resistance Seymour Papert faced decades ago while advocating vigorously, and often unsuccessfully, that schools should use computers in classrooms to help students learn more effectively.

A co-inventor of Logo, a computer language designed to help children become more technologically fluent, he pioneered using computers as a creative teaching tool. In 1970, Dr. Papert worked with a class of Lexington seventh-graders – two to a terminal, four hours a week – to help them build cognitive skills by using Logo.

“We were particularly impressed by the ease with which the children assimilated numerous new mathematical functions,” he told the Globe then. “Yet it seems less surprising if one focuses on the fact that children learn new English words every day – and that the meanings of many of these are at least as complex in structure as simple mathematical functions.”

Making key connections like that about how children learn was common for Dr. Papert, whose renowned imagination was the foundation for achievements in education, mathematics, and artificial intelligence.

A professor emeritus at the Massachusetts Institute of Technology, where the Papert professorship of learning research is named in his honor, Dr. Papert died Sunday in his East Blue Hill, Maine, home. He was 88 and his health had been failing due to ailments including infections.

He had lived out his years in Maine after being critically injured nearly a decade ago when a motorbike struck him as he crossed a street in Hanoi, where he was attending a conference. Since then, his family and health aides used approaches drawn from Dr. Papert's own education technologies to try to help him recover the intellectual prowess colleagues hailed as monumental and inspiring.

“With a mind of extraordinary range and creativity, Seymour Papert helped revolutionize at least three fields, from the study of how children make sense of the world, to the development of artificial intelligence, to the rich intersection of technology and learning,” L. Rafael Reif, MIT's president, said in a statement. “The stamp he left on MIT is profound. Today, as MIT continues to expand its reach and deepen its work in digital learning, I am particularly grateful for Seymour's groundbreaking vision, and we hope to build on his ideas to open doors to learners of all ages, around the world.”

Four years after arriving at MIT, Dr. Papert became co-director in 1967 of the Artificial Intelligence Lab, which is now commonly known as CSAIL – the Computer Science and Artificial Intelligence Laboratory. In 1969, Dr. Papert cowrote “Perceptrons,” a seminal work in artificial intelligence, with Marvin Minsky, an MIT professor who was the lab's founder and who died in January.

An evangelist for computers long before they became a fixture in nearly every home, Dr. Papert wrote in a 1984 essay, “Computer as Mudpie,” about the challenges he faced. “One has to be a terrible egomaniac ... to think that one

can change culture. One can't." But he added: "I think within five or 10 years it's going to be accepted that everyone should have a computer, and use it all the time for just about everything."

The following year, Dr. Papert and Minsky became founding faculty members of the MIT Media Lab, along with Jerome Wiesner, a former MIT president, and another MIT professor, Nicholas Negroponte.

"Seymour often talked poetically, sometimes in riddles, like his famed phrase, 'You cannot think about thinking without thinking about thinking about something,'" Negroponte, the lab's first director, said in a statement released by MIT.

Born in Pretoria, Dr. Papert was one of three siblings. He graduated with a bachelor's degree in philosophy from the University of the Witwatersrand in South Africa, where he was involved with the anti-apartheid movement. He received a doctorate in mathematics there three years later.

He was a math researcher in the mid-1950s at Cambridge University in England from which he received a second doctorate and then moved to the University of Geneva, where his burgeoning interest in how children are educated was influenced by philosopher and psychologist Jean Piaget.

Dr. Papert left Switzerland to become a research associate at MIT. Along with "Perceptrons," his books include "Mindstorms: Children, Computers, and Powerful Ideas" (1993) and "The Connected Family: Bridging the Digital Generation Gap" (1996).

As an alternative to the traditional method of instructing children how to learn, Dr. Papert created an approach he called “constructionism.”

“At the core of Seymour’s theory of learning and education was the idea that people learn best when they’re actively engaged in creating things and expressing themselves,” said Mitchel Resnick, a professor of learning research at the MIT Media Lab who considered Dr. Papert a key mentor.

Arguing against the education tradition of delivering instruction, “Seymour had a vision that children should have the opportunity to explore and experiment and express themselves – that we needed to give children those opportunities, and they would take advantage of them,” Resnick said.

In that regard, Dr. Papert’s own life was an example and inspiration, he added.

“Seymour was one of the most playful and creative and inspiring people I ever met,” Resnick said. “He was constantly experimenting, trying new things, exploring new ideas. He had an incredibly active, imaginative mind. He was always questioning, always exploring new possibilities.”

Artemis Papert of Montreal, Dr. Papert’s daughter from his second marriage, recalled trips to restaurants in Boston’s Chinatown, where he would “look at the menu and say, ‘This looks really intriguing – we have to order it,’ and back home would try to recreate, often through guesswork, culinary treats they encountered.

Dr. Papert formerly was married to Dona Strauss, Androula Christofides Henriques, and Sherry Turkle, a writer and MIT professor.

Even in everyday conversation, when Dr. Papert was considering a question someone asked or contemplating a newly encountered idea, “with him there was a sense that he was unlocking a puzzle with great delight,” said Robert Massie, the son of Suzanne Massie, a Russia scholar whom Dr. Papert married in 1992.

“He enjoyed life,” said Robert Massie, who is executive director of the Sustainable Solutions Lab at the University of Massachusetts Boston. “He enjoyed music, he enjoyed food. There was a kind of joie de vivre.”

In addition to his wife, daughter, and stepson, Dr. Papert leaves two stepdaughters, Susanna Massie Thomas of Harrodsburg, Ky., and Elizabeth Massie of Pelham, N.Y.; a brother, Alan of Newburyport; a sister, Joan of Victoria, B.C.; and 11 step-grandchildren.

MIT will announce plans for a memorial gathering to celebrate Dr. Papert’s life and work.

Beginning in the 1980s, Dr. Papert collaborated with the LEGO company, which incorporated his ideas into the LEGO Mindstorms robotics kit. After settling in Maine in the late 1990s, he founded the Learning Barn and the Seymour Papert Institute. And a dozen years ago, he worked with colleagues including Negroponte on the nonprofit One Laptop per Child, which placed low-cost computers with poor children throughout the world.

In a 1989 Globe interview, Dr. Papert said many of his ideas emerged from finding ways to link learning and play. “Joyful learning was life,” he said. “That has become for me the model in thinking about what kind of learning

environment we want to build for children. Playfulness as an intellectual goal is appropriate to learning. It's more effective, more humane, more childlike.”

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