

### **Ten Considerations When Proposing Computer Science for All (all children)**

President Obama recently proclaimed a goal of computer science education for every student. This follows similar proclamations made around the world. Educators, especially those committed to learning by making, should lead the movement to teach all kids to program, but only after goals are clarified and Computer Science for All is defined. This lecture will explore the mutually supportive nature of making and computer science education, while cutting through the confusion associated with the latest "opportunity" being delivered to schools. Exciting examples of what computer science in a constructive context look like will be shared and 10 powerful ideas of teaching CS discussed.

The presenter has four decades worth of experience teaching K-12 computer science in schools across the globe and is on the advisory board of the National Science Foundation-funded, BJC4NYC: Bringing a Rigorous Computer Science Principles Course to NYC.

### **Why Papert Matters**

The world recently lost a great mathematician, philosopher, educational theorist, inventor, school reformer, and freedom fighter, Dr. Seymour Papert, father of educational computing. Dr. Gary Stager had the good fortune of working with Dr. Papert for twenty years, including as the principal investigator on Papert's last major institutional research project - creating a high-tech, multi-age, alternative learning environment inside of a troubled prison for teenagers. He has also spent more than three decades helping schools around the world embrace forms of Papertian education, including pioneer work in 1:1 computing and teaching programming to children. Stager also curates the Papert archives found at [DailyPapert.com](http://DailyPapert.com).

In this lecture, we will explore Papert's many contributions to education today and his vision for making the world a better place for learners in the future.

### **Reinventing School Mathematics**

It's Time for Action!

There may be no greater gap between a discipline and the teaching done in its name than when the beauty, power and mystery of mathematics become math instruction. One can only begin to address the systemic challenges of math education by understanding the nature of mathematics and the power of computing. Nearly 100 years of efforts to increase achievement with unchanged curricular content continues to fail spectacularly; yet, we do not change course. Surely, the widespread availability of computational technology demands new pedagogical approaches and a new diet of mathematics.

There has never been greater interest in mathematics education, yet there is little consensus on how best to prepare children to face an increasingly complex future. We live at a time when politicians call for an emphasis on S.T.E.M. while students dislike math, teachers lack confidence in their mathematical ability, achievement is static and inequitable, computational thinking is required for navigating a successful life, and your phone can solve every problem in the existing math curriculum - simultaneously. Seymour Papert reminds us that our efforts might be better spent inventing a diet of mathematics children can love, than developing tricks to teach them a mathematics they hate.