

## **Life as a Learning Lab**

Over the years, many of my interactions with Alan have come at his Learning Labs. Alan organizes these gatherings once or twice a year, bringing together people from a variety of backgrounds to engage in new types of learning experiences and rethink ideas about learning and education.

For me, these Learning Labs capture the essence of what makes Alan special. Many people see Alan as a great computer scientist, given his pioneering work in object-oriented programming. Other people see Alan as a great visionary, given the profound and enduring impact of his Dynabook concept, which provided a glimpse of mobile computing with dynamic media years before other people had thought about these ideas and decades before the technology was actually ready.

These perceptions are certainly valid: there is no doubt that Alan is a great computer scientist and a great visionary. But as I see it, what's most special about Alan is that he is one of the world's great learners. He is excited about all aspects of learning: doing it, analyzing it, understanding it, encouraging it, promoting it.

Alan's Learning Labs last only a few days. But for Alan, all of life is a Learning Lab.

Anyone who has spent time with Alan knows that he is a voracious reader. He reads more books in a week than most people do in a year. At his home in Los Angeles, Alan has put together not simply a book collection but a full library, with books organized on shelves according to Dewey Decimal classification.

But Alan also understands that book knowledge is only one dimension of knowledge. At Alan's Learning Labs, people are encouraged to put their inhibitions aside and immerse themselves in new learning experiences. I have fond memories of learning to play drums with Arthur Hull, learning to build rockets with Modesto Tamez, learning to draw with Betty Edwards, learning to create toys with Arvind Gupta, learning to sing with Don Lewis. In each case, the leaders of the activities were not so much teaching us as inviting us to join them on new learning adventures.

Many of these activities pushed me outside of my comfort zone – but that's precisely the point. Alan understands that learning involves trying new things, exploring the unfamiliar, taking risks, experimenting and re-experimenting. When I was in fourth grade, my teacher told me to lip-sync during the holiday concert, since my voice was so off-key. At Learning Labs, Alan got me singing again – and learning from the experience.

Learning Labs combine immersion with reflection. People spend part of the time diving into new and unfamiliar activities – then stepping back and reflecting on learning experiences – then imagining new ways to share these activities, ideas, and experiences with others.

Sometimes people associate this type of immersive, experiential learning with a lack of rigor or systematicity. Not Alan. Indeed, this is where Alan parts company with some progressive educators. Alan puts a very high priority on people becoming systematic thinkers, and he knows that won't happen without the right type of structure and support. Alan is a firm believer in what Seymour Papert has called “powerful ideas” – a set of concepts that provide special leverage for understanding the workings of the world. As Alan often explains, these concepts have been developed by societies over centuries, so we shouldn't expect students to re-invent these ideas totally on their own.

At Learning Labs, we've spent hours and hours discussing how we can (1) help students follow their interests and passions, and also (2) help students learn powerful ideas and develop as systematic thinkers. It's not easy to accomplish both goals. At some Learning Labs, people have presented projects or ideas that supported the first goal but paid insufficient attention to the second. That's when I've seen Alan become most animated and argumentative. It's clear that no one is a stronger proponent and defender of powerful ideas than Alan.

Given Alan's expertise and interests, it's not surprising that some of the discussions at Learning Labs revolve around new technologies. But learning always remains an important theme. Indeed, technology and learning are woven together in many activities at Learning Labs, as they are in Alan's thinking and in his life. From one Learning Lab to the next, technology and learning co-evolve. Strategies for learning and education evolve based on the availability of new technologies, and new technologies evolve based on new ideas about learning and education.

Alan initiated the Learning Labs in the early 1980s, when personal computers were first entering the world in significant numbers. I started participating in Learning Labs in the early 1990s, and Alan soon invited me to bring my whole research group. For the next decade, we made it an annual tradition: my group joined Alan's group for the August Learning Lab held at Apple Hill in New Hampshire. For my research group, it was a great way to start the new academic year – diving into new learning experiences and sharing ideas with Alan's group.

Indeed, my group's Scratch software, our biggest and most important project, can be traced directly to the Learning Labs. It was at the Learning Labs that I first saw Etoys, the children's programming environment developed by Alan's group. I was inspired by the way Etoys connected powerful ideas with youth culture, adding programmability to the media-manipulation activities that are popular with many children and teens. Etoys had a strong technical foundation, building on

top of Alan's own Squeak software, and also a strong conceptual foundation, building on top of the powerful ideas represented in Seymour Papert's Logo.

I saw great potential in Etoys, and hoped that some of my group's ideas might contribute to the further development of Etoys – particularly in making the software even more accessible to children. I suggested to Alan that we get together, along with my colleague Brian Silverman, to discuss possibilities for collaboration. Alan generously set aside an entire weekend to meet with us. The discussion, as is typical with Alan, was incredibly wide ranging, touching on everything from the advantages of late-binding programming languages to the challenges of educational initiatives in under-served communities to the latest research in evolutionary biology.

By the end of the weekend, Alan made a suggestion: Rather than setting up a direct collaboration between our two teams, he proposed that each team work on its own project but freely share ideas and code with each other. That way, he said, we would explore a wider range of possibilities and continue to learn from one another.

And that's how our Scratch project was born. In developing Scratch, we borrowed lots of ideas from Etoys – and even borrowed John Maloney, one of the main programmers from the Etoys team. As Scratch has continued to grow and evolve, Alan has been generous not only with his time and ideas but with his support and encouragement – even though Scratch is, in some ways, a competitor to his own Etoys project.

So I'd like to end with a special thanks to Alan as a wonderful mentor. While I've been inspired by Alan as a computer scientist, visionary, and learner, I am most grateful that Alan has been a great friend and mentor.

*Mitchel Resnick, Professor of Learning Research at the MIT Media Lab, develops new technologies to engage people (especially children) in creative learning and design experiences. His research group has developed the Scratch programming language and online community, the "programmable bricks" underlying LEGO Mindstorms robotics kits, the StarLogo massively-parallel programming language, and the Computer Clubhouse network of after-school learning centers for youth from low-income communities. His goal is to help children learn to think creatively, reason systematically, and work collaboratively. Resnick earned a BS in physics from Princeton, and an MS and PhD in computer science from MIT. Mitchel participated in a course that Alan taught in 1986, in the early days of the MIT Media Lab, and has been influenced by Alan's ideas ever since. Over the years, Mitchel and his graduate students have been regular participants at Alan's Learning Labs.*