International Journal of People-Oriented Programming
Volume 6 • Issue 2 • July-December 2017

Book Review

Lifelong Kindergarten:
Cultivating Creativity Through Projects, Passion, Peers, and Play

Reviewed by Christine Yunn-Yu Sun, eBookDynasty.net, Melbourne, Australia

Lifelong Kindergarten: Cultivating Creativity through Projects, Passion, Peers, and Play
Mitchel Resnick

208 pp.
$24.95
ISBN: 978-0-262-03729-7

Just a short way into the first chapter titled *Creative Learning*, the author states: "*How can we help young people develop as creative thinkers so that they're prepared for life in this ever-changing world? That's the central question of this book— and it's the question that has motivated my work (and my life) over the past three decades.*" - clearly this is the theme of the book.

However, there are a number of different story arcs running through this book. One reading of it has Mitchel Resnick making a case for a Creative Society, rather than an Information Society or a Knowledge Society, as the prime objective of educators in the 21st century. Furthermore, down the end of the book the author provides some distilled guidelines to help make it so by giving the reader a series of 10 Tips for helping to develop creativity in people: Ten Tips for Learners (from learners). Ten Tips for Parents and Teachers. Ten Tips for Designers and Developers.

From another angle the author weaves some hard-won wisdom often infused with anecdotes, in terms of supporting creative development in children, from across his whole career at the MIT:

- Resnick is a co-founder of the Computer Clubhouse, a global string of after-hours learning centres for youth in disadvantaged communities, of which there

are now 100 clubhouses in 20 countries connected online in a network called the Clubhouse Village;

- Resnick's earliest project with the late Seymour Papert, his mentor and doctoral supervisor, on connecting the Logo programming language to LEGO blocks, lead to a 30 year collaboration with the Lego Group, sustained through "shared values about children, play, creativity and learning";
- And perhaps the most impactful, Resnick's ongoing research and support of the popular Scratch visual programming language and the creative eco-system surrounding it, now 10 years strong with some 20 million shared projects online, for children to play with for free.

The most obvious arc running through the book is the main structure, which puts flesh on the bones of the subtitle - *Cultivating Creativity through Projects, Passion, Peers, and Play* - by declaring, motivating and then underlining the importance of each of these four P's, and showing how each does encourage and support creativity in children.

In doing so, Resnick often calls upon two significant resources to make and support his points. The first, drawing upon the longevity of the Computer Clubhouse, allows him to interview several adults currently in successful positions in society, who discovered their passion and a way to realise it when, as kids, they stumbled into a Computer Clubhouse. The other is the 20-million projects on Scratch, with followers, commenters and collaborators, allowing him to use carefully selected examples to make each of his points. Indeed, some of them no doubt helped him see the original point, in what is after all a very large laboratory for MIT researchers on learning and creativity.

Besides the 4P's Resnick has a second rubric that he calls *the Creative Learning Spiral*, consisting of these phases: *Imagine, Create, Play, Share, Reflect* - then *repeat* the whole process. He calls this *the engine of creative thinking*. It is drawn from his observation of what children do in kindergarten, or should still do, and is the source of the title of the book.

He is equally attracted to the Maker Movement but for different reasons than most:

I believe that it has the potential to be not just a technological and economic movement but also a learning movement, providing new ways for people to engage in creative learning experiences. As people make and create, they have opportunities to develop as creative thinkers.

He has been a strong advocate for teaching coding to all young people, indeed, for them to become fluent in coding:

Most people won't grow up to become professional programmers or computer scientists, but learning to code fluently is valuable for everyone. Becoming fluent, whether with writing or coding, helps you to develop your thinking, develop your voice, and develop your identity.

He acknowledges the progress made in teaching computational-thinking, but laments that many of the initiatives are based around solving set puzzles. "Solving puzzles can be helpful in developing some of these computational-thinking skills, but creating your own projects takes you further, helping you develop your voice and develop your identity."

Pressing for youth being able to follow their passion by pursuing projects close to their interests is well enough understood. In this regard, Seymour Papert emphasised the importance of "low floors" and "high ceilings", meaning that concepts, tools and techniques should be easy to get started in, but still have as few limits as possible on what they can achieve. Resnick adds to that emphasis in Scratch, by providing "wide walls", allowing youth with all sorts of interests, to pursue a project with passion.

He concedes that Gamification has become the conventional wisdom in educational circles, and points to some dangers in that.

Perhaps concerned that some other contemporary learning innovations will suck oxygen out of the virtual educational room, he takes a swipe at Personalised Learning, without support to back up his reasoning.

One aspect of personalised learning can tailor instructions according to how students are travelling within a particular topic, through sets of short questions here and there. Their path through topics can be automatically varied, and areas that were not understood can be reinforced at the individual student level. His critique of such systems:

One problem is that these systems tend to work only in subject areas with highly structured and well-defined knowledge. In these fields, computers can assess student understanding through multiple-choice questions and other straightforward assessments. But computers can't assess the creativity of a design, the beauty of a poem, or the ethics of an argument. If schools rely more on personalized tutoring systems, will they end up focusing more on domains of knowledge that are easiest to assess in an automated way?

Such systems are used for gauging a student's comprehension to strengthen areas where they are showing a need for further learning, not just assessment for assessment's sake. If such personalised tutoring systems indeed become widespread, it can create the opportunity for more teaching to focus on learning creativity in those other subjects not suited to such systems. This is a point overlooked or discounted by the author.

In a section titled *Tensions and Tradeoffs - Structure* he indicates that in future versions of Scratch "*We need to provide more structure and support to help children get started with Scratch*". That is, he concedes the "wide walls" are too wide for some.

The section on *Peers* and the *Culture of Caring* in the Scratch online community is particularly heartening and instructive. In these days of widespread trolling and abuse in social media platforms such as Twitter and Facebook, it is good to hear of the ways and means that the Scratch team cultivates a caring community around it - and why it needs to be that way to encourage learning and growth. However, it sounds a bit utopian - this reviewer will need to experience it to fully believe it.

This reviewer was so much looking forward to the section on *Play* and was not disappointed. The author quickly turns the focus from Play to the importance of *Playfulness*. There is a nice discussion of *Play Pens* versus *Playgrounds* as metaphors for the various approaches around, where the former heavily controls what creativity is possible, while the latter doesn't.

There is an interesting section on *Tinkering* with some nice quotes like: "*Tinkering is at the intersection of playing and making*" and "*Tinkerers use screws, not nails*."

The author is particularly strident in his opposition to the teaching of planning:

Schools tend to emphasize the value of planning over tinkering. Planners seem more organized, more direct, more efficient. Planners take a top-down approach: They analyze a situation, identify needs, develop a clear plan, then execute it. Do it once and do it right. What could be better than that? … Tinkerers believe in rapid prototyping and iteration.

"Do it once do it right" is old school and excludes planning for contingencies, which is still planning. This reviewer is all for cultivating creativity, and for (some) disrupting of the current education systems for children, that currently seem to squash much of the innate creativeness out of our children, as they go beyond kindergarten. However, it helps to show some balance and grace in order to turn some teachers around from currently held positions in order to enact significant change. You can't just dismiss planning and replace it with tinkering.

There were one million planned steps in getting man to the moon in the Apollo missions. You can't just tinker your way in that sort of large project. On the other hand, it was creative tinkering with duct tape (according to the movie) that saved the Apollo 13 crew when their damaged craft was running out of oxygen, a situation that arose from poor planning.

The two approaches are not mutually exclusive but complementary.

Further along, there is a section titled: *Many Paths, Many Styles*. The author highlights the importance of accepting, valuing, and supporting many different ways of knowing as stressed in a much earlier work by Sherry Turkle and Seymour Papert. In this section Resnick concludes with the recognition that "we should focus on figuring out ways to help all children, of all backgrounds and learning styles, reach their full potential." Clearly his emphasise earlier on tinkering and prototyping over planning is about redressing educational system biases towards other styles of learning, not replacing them, although it wasn't clear at the time. In this regard, the book itself exhibits signs of tinkering, of improvement, the further you read into it.

There is a valuable section on *Assessment* and the place for *Portfolios* of creative work. Then there is the series of Ten Tips already mentioned.

This is a timely book and one from the inventive student of Seymour Papert. Resnick makes the case for a Creative Society, saying we'll need to be anyway, given the accelerating changes in society. He shows a substantial and well-tried path for getting there. He makes a strong case for more *Making* and more *Tinkering* in our educational endeavours. Most of all, it is by an author drawing from a unique, long and awarded career in the advancement of creativity in the young.

There is a direct line of thought, intent and progress from Jean Piaget and his constructivist learning theories, to his one-time collaborator Seymour Papert and his *Constructionism* and the Logo language, through to his one-time student and collaborator Mitchel Resnick, his research and output, particularly around Scratch. With Scratch and the sharing community of peers that may come from anywhere in the online world, Resnick sits atop a flexible virtual eco-system that supports what he calls the Creative Learning Spiral - an eco-system still evolving.

Lifelong Kindergarten is a valuable and highly recommended book that draws timely advice from across an extraordinary career of making things happen to raise creative young minds. It is equally thought provoking for the educationalist, the researcher, and both teachers and parents.