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

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BOOK REVIEW

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This book focuses on why creativity is important and how to help children develop creativity. It is for teachers, parents, school administrators, and anyone who is interested in creativity. The book title stems from the author's belief that "kindergarten-style learning is exactly what is needed to help people of all ages develop the creative capacities needed to thrive in today's rapidly changing society." One main strength of the book is that the author draws on his experience in developing technologies and creating projects in the MIT (Massachusetts Institute of Technology) Media Lab to illustrate the importance of creativity and how it can be fostered. Another characteristic of the book is that each chapter, except for the last one, ends with a story of someone who experienced projects organized by the author's MIT research group, which helps readers understand the value of kindergarten-style learning.

Chapter 1, "Creative Learning," begins with a story of the author meeting the president of Tsinghua University, the MIT of China. The president stated that his goal was to produce X students, who are able to define problems, experiment with new things, and solve problems creatively. The chapter then introduces the concept of lifelong kindergarten. As children play in kindergarten, they go through a creative learning spiral—imagine, create, play, share, and reflect. In order to support creative learning, the author's research group at MIT has been developing Scratch, following the four P's of creative learning—Projects, Passion, Peers, and Play. In this chapter, the author also clarifies several misconceptions about creativity.

Chapter 2, "Projects," emphasizes the importance of project-based learning and how projects contribute to creative learning. The Maker Movement that has become popular provides children with opportunities to work on projects. The author recalls his own experience of building a golf course as a child. He learned the concept of collisions, and

calculated and measured angles. He also learned the process of making things—coming up with initial ideas, experimenting with the ideas, evaluating tentative solutions, and revising solutions. The author also argues that the best toys for children are those that can be used to create projects, and the best way to select a technology for children is to see what children can create with the technology. The author states that project-based learning is an effective strategy to introduce coding to children.

Chapter 3, "Passion," begins with a description of the author's observation of children working on projects at the Computer Clubhouse. The Clubhouse provides children with access to technologies and staff support when they work on projects. Children work hard on the projects, and some work more diligently than at school because they are passionate about the projects. To meet the needs of children with different interests, the author's Lifelong Kindergarten group designs and develops technologies that can support a wide range of projects related to children's interests. This chapter also introduces the concept of "hard fun," which describes the phenomenon that children tend to work hard on things they care about, even when the projects are challenging. The author argues that personalization is to give children choices over their learning paths—what to learn, and where, when, and how to learn it. The author describes the personalized learning feature of the Scratch programming website to illustrate how personalization can be supported.

Chapter 4, "Peers," is about the role of peers in the development of creative thinking. A learning space should be designed in a way that is convenient for learners to collaborate. The author states that the Scratch online community aims to "foster a culture of caring" and describes how the Scratch online community is created and maintained for

children to collaborate with others, share their projects, and learn from others. The chapter then describes what is good teaching, presents how Clubhouse mentors teach children, and explains how Clubhouse encourages children to help others learn. This chapter also addresses the relationship between *peers* and *expertise* and argues that, besides peers, children need mentorship and guidance.

Chapter 5, "Play," details how children can best learn from play and how to assess learning from play. The author distinguishes two types of environment—playpen and playground. A playpen is an environment that provides children with "limited opportunities to explore." Playground gives children more possibilities to experiment and develop their creative thinking. LEGO bricks build a playground environment in which children make a decision about what to create and they can build a wide range of things. When children play with a LEGO robotics kit, they are involved in a tinkering process—try an idea, evaluate a solution, and refine the solution. The author also touches upon how to help students deal with mistakes. When children work on problem-solving activities, they may make mistakes. We need to help children overcome the fear of failure and learn from mistakes, which is critical for the develop-

ment of creativity. How should one evaluate student learning from the playful activities? We can "document their projects, illustrating what they created, how they created it, and why."

Chapter 6, "Creative Society," explores how to shift from an information society to a creative society in order to achieve success when adapting to constant, fast changes. The author examines a small Italian town's approach to creativity, which allows students the freedom to explore and create. Parents collaborate in the process of creativity, and the author notes that "it not only takes a village to raise a child, it also takes children to raise the village." The author provides ten tips for becoming a creative society for each of three primary groups—learners, parents/teachers, and designers/developers. While there is a natural tendency to resist change, the author addresses barriers that need to be broken in order to move toward a creative society. The philosophy of lifelong kindergarten centers on the notion that everyone learns and enjoys kindergarten, so why not maintain some of those methods for creativity beyond kindergarten? Two points in favor of moving toward a creative society include people recognizing the limits of traditional approaches and children encouraging the shift away from traditional approaches.