



Edward P. Clapp · Jessica Ross · Jennifer O. Ryan · Shari Tishman

Maker-Centered Learning

Empowering Young People to Shape Their Worlds



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Edward P. Clapp • Jessica Ross • Jennifer O. Ryan • Shari Tishman

Foreword by Ron Berger

Afterword by Wendy Donner

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Foreword

I live in a rural town where most of the roads are dirt, where there are no traffic lights or stores, where the firefighters are volunteer citizens. Other than homes, the town has few buildings: a town hall, a post office, a church, a bar, and a school. For 25 years I was one of the few teachers in our small public school; almost everyone in my town under the age of 50 is a former student of mine. Students from this school have done remarkably well, by almost any measure: test scores, college, careers, and adult lives.

Here is an important thing: students in the school spent much of their time making things. Students worked hard at literacy and math skills, knowledge of the world, just like at any school. But they did not focus that learning toward preparing for tests; instead, they used that learning to make great things. Mothers and fathers in this town, many of whom worked hard all day with their hands, took tremendous pride that their children were not just getting smart but also were developing a strong work ethic, problem-solving skills, and high standards for quality.

With almost no town employees beyond a two-person road crew, the students stepped in to help. They created demographic maps of housing and roads; they created field guides to local species; they created books to honor the lives of local veterans, workers, and citizens; they created scientific reports of home radon levels, water quality in home wells, water quality in streams; they built recycling sheds and playground structures; they created road signs and public art. They were building the same academic skills as students in other schools, but with much deeper purpose and passion.

Today, that *passion in making great things* suffuses the national school network where I now work—EL Education—which comprises over 150 public schools across 30 states, some of which are featured in this book. Most of these schools are situated in low-income urban settings, and the results of this approach to learning are profound. Many of these schools, sited in cities where high school graduation rates are alarmingly low, are getting almost every student to graduation on time and

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getting every single graduate into college every year. Other school networks that share this approach, such as the High Tech High Schools in California, are getting these same results. This success is something we as a nation need to understand.

This book, *Maker-Centered Learning*, takes on the fundamental question of how *making things* connects to the learning process and to student empowerment. With depth, integrity, and insight that are hallmarks of Project Zero, this analysis of *making and learning* explodes the shallow binary debate about whether the new maker movement is a groundbreaking answer to transforming schools, or simply a distraction. It instead dives deeply into the questions no one is asking: *What constitutes “making”? How does the process of making instantiate learning? What are the characteristics of successful making experiences? In what conditions is making a transformational learning experience for students?*

This book is not an advertisement or an indictment of the maker movement but rather a balanced look at what the movement represents and where it lives in the educational landscape. The current movement, as this book points out, was primarily a white, male initiative centered on new technology that is now filtering into schools—disproportionately schools that serve economically privileged students. But the power of making things, within school and outside of it, is not in any way limited to this sector, and the underlying potential of a maker-centered pedagogy can cut across gender, class, age, and setting. Understanding the conditions in which making is transformative for children can improve learning during school and after school and can make makerspaces effective centers of learning.

Maker-Centered Learning should be required reading for any school or district that is considering building a makerspace. As an educator who has spent a lifetime focused on student craftsmanship, I am sad to say that I am as often depressed as inspired when I am brought into a contemporary school makerspace. It is not that a well-designed makerspace does not have potential. I have seen students creating originally designed, stress-tested, low-cost wheelchair components to be sent to a developing country. I was humbled. But much of the time when I enter a school makerspace I see students using 3-D printers to create sloppy plastic versions of their names, without purpose or craftsmanship. Those schools need this book.

But it is not that schools and districts need to read this book just to improve their new makerspace. Educators need to read this book to consider how we can elevate and support the power of maker-centered learning throughout the school day, in every classroom, and outside of school as well. To understand the conditions of learning in which students from all backgrounds can be engaged and supported to *make great things* and transform their learning and their lives.

Ron Berger, Chief Academic Officer, EL Education

Maker-Centered Learning

