

How to Innovate

The Essential Guide for
Fearless School Leaders

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Foreword by Tony Wagner



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Foreword

In Chapter 1 of this important and valuable book, Mary Moss Brown and Alisa Berger explain why current so-called “innovations” in education are unlikely to adequately prepare students for the 21st century. I agree completely with their assessment. However, I think educators, parents, and community leaders may not fully understand the economic consequences for our students and for our country if we do not reimagine America’s schools.

The iSchool opened its doors in 2008 at a time of accelerating economic turmoil. The global economic meltdown that began that year has hastened the elimination of many kinds of jobs. Businesses now use ever more automation to cut jobs and increase profits. In their important book, *Race Against the Machine*, MIT economists Erik Brynjolfsson and Andrew McAfee argue convincingly that even highly skilled jobs are increasingly at risk. Half a dozen years ago, no one thought that machines could handle a task as complex as driving in heavy traffic. The Google driverless car has proved otherwise. Similarly, computers now compile and write complex financial reports and compete successfully against humans in chess and on *Jeopardy!*

The declining unemployment rate that is reported in the media does not capture the percentage of people who have given up looking for jobs or who have part-time jobs and are seeking full-time work. As I write this in the late fall of 2013, the percentage of Americans who are working or seeking work—63%—is at the lowest point since women began entering the labor force in significant numbers in the late 1970s. Young people in their 20s have been hardest hit of all, with 1 to 5 of them neither in school nor employed.

Nor does the unemployment rate say anything about the quality of jobs available. The vast majority of jobs that have been created in recent years are minimum wage service and sales jobs. The result of all of these trends, economists tell us, is that the gap between the rich and the rest of us is greater than at any time in this country’s history since 1929.

Historically, college graduates have always had an easier time finding jobs and earn considerably more than high school graduates over the course of their work life. It is no surprise, then, that an increasing number of young people are enrolling in college in response to this jobs crisis. Indeed, the mantra of many of our policymakers and educators is that all students should graduate from high school “college ready.” As a result, the college attendance rate in this country is the highest that it has ever been.

However, there is a growing body of evidence that attending college might not be the good investment it once was.

Since the turn of the century, college tuitions have continued to increase at a significant rate, while median family income has actually declined. College tuitions have increased 72% since 2000, while family income is down 10%. To close this gap, students and their families are borrowing more money than ever. College debt recently exceeded credit card debt in this country—over \$1 trillion. Students now graduate with an average combined family debt of over \$30,000.

That is, if they graduate at all. Colleges have done nothing to stem the horrible attrition rate of students. Of the students who enroll in colleges, only about half complete any sort of degree. The completion rate of our community colleges—where many of our most disadvantaged students enroll—is less than 30%.

Then there is the problem of the job prospects for our recent college graduates. Depending upon whose numbers you believe, the combined unemployment and underemployment rate of recent college graduates is somewhere between 27% and 54%. Far too many of our college graduates are finding that the only kinds of jobs they can get do not require a BA degree and certainly do not pay a college graduate wage. We talk a lot about government debt in this country, but the debt I worry about most is the debt of our college graduates. It is the only form of personal debt that cannot be eliminated by filing for bankruptcy.

This dismal employment picture for recent college graduates exists at a time when employers say they cannot fill available positions for highly skilled workers. This is because there is a profound mismatch between what students learn in college versus what employers say they need. It is not merely a matter of students picking the wrong college major. Employers say they do not care what job applicants' college majors are. They care about skills. According to a recent survey of employers conducted on behalf of the Association of American Colleges and Universities, "Nearly all those surveyed (93%) agree, 'a candidate's demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than their undergraduate major.'"¹ The Seven Survival Skills that I wrote about in my 2008 book, *The Global Achievement Gap*, are more important than ever to employers.

As necessary as these skills are, they are no longer sufficient. Employers want something more from new hires now. Over and over again, business leaders have told me that they want employees who can "just go figure it out"—who can be, in a word, creative problem-solvers or innovators. In my most recent book, *Creating Innovators: The Making of Young People Who Will Change The World*, I explore what parents and teachers can do to develop these capacities. One of my most striking findings in interviews with young creative problem-solvers in their 20s is that many became innovators in spite of their excellent schools, not because of them. Students who went to Harvard, MIT, Stanford, and Carnegie Mellon all told me that it was the rare outlier teacher who had truly made the difference in their development.

Sadly, there is a growing body of evidence that many of our college graduates are not learning any of the skills that matter most. In a recent study that involved 2,300 undergraduates at 24 institutions, Richard Arum and Josipa Roksa analyzed data from the Collegiate Learning Assessment, the state-of-the-art test. They found that, after 2 years of college, 45% of the students tested were no more able to think critically or communicate effectively than when they started college. Their book, *Academically Adrift*, makes a compelling case for the need to fundamentally rethink the nature of a college education and accountability for results.

Employers are beginning to wise up to the fact that students' college transcripts, GPA, and test scores are a poor predictor of employee value. Google famously used to hire only students from name brand colleges with the highest GPAs and test scores. However, according to recent interviews with Lazlo Bock, senior vice president of people operations at Google, these data are "worthless" as predictors of employee effectiveness at Google.

1 Quoted from the Association of American Colleges and Universities survey conducted by Hart Research Associates, "It Takes More Than a Major: Employer Priorities for College Learning and Student Success," Washington, DC: http://www.aacu.org/leap/documents/2013_EmployerSurvey.pdf. Accessed October 20, 2013.

The company now looks for evidence of a sense of mission and personal autonomy and is increasingly hiring people who do not have a college degree. Even the interview questions they pose have changed. In the past, Google interviewers asked prospective employees brain teaser questions like how many ping-pong balls can you get into a 747 or how many cows are there in Canada. Now they want them to talk about a complex analytic problem they have tried to solve recently.²

* * *

Our schools are not failing, as many claim, but rather they are obsolete. We continue to focus far too much time on teaching and testing content knowledge that can be retrieved from the Internet, as needed. Knowledge has become a free commodity, like air, and so the world no longer cares how much our students know. What the world cares about is what they can do with what they know, which is a completely different education problem.

Reimagining school and creating more schools like the iSchool must be our highest national priority. All students need to graduate from high school and college “innovation ready,” as well as prepared for the complex challenges of continuous learning and citizenship in the 21st century. Time is running short. I urge you to read this book with urgency.

—Tony Wagner, expert in residence,
Innovation Lab, Harvard University

2 See the June 19, 2013, *New York Times* interview with Lazlo Bock: http://www.nytimes.com/2013/06/20/business/in-head-hunting-big-data-may-not-be-such-a-big-deal.html?pagewanted=all&_r=0, as well as the April 20, 2013, article by Steve Lohr, “Big Data, Trying to Build Better Workers,” also in the *New York Times*: <http://www.nytimes.com/2013/04/21/technology/big-data-trying-to-build-better-workers.html?pagewanted=all>. Both accessed October 3, 2013.

Preface

We cannot solve our problems with the same thinking we used when we created them.

—Albert Einstein

It is widely accepted that schools must adapt to meet the needs of our changing society and the 21st-century learner. The notions of 21st-century schooling, often referred to as school 2.0, and more recently 3.0, in which collaborative technologies are used to enhance students' development of higher-order thinking skills and interaction with the real world, now dominate conversations around school reform. Educators, scholars, and business leaders agree that our school system is antiquated, yet reform efforts have continued to focus on tinkering with aspects of the current system, often with the goal of producing better results on standardized tests.

Targeted and isolated efforts toward school improvement have not been effective in creating the kind of change and improvement we need to ensure that our schools are adequately preparing students for the ever-changing global society in which we live. A more comprehensive and innovative approach, founded on systemic change and dynamic leadership, is needed to redefine secondary schools and the adolescent school experience. School systems and school leaders understand that change is necessary and inevitable. Unfortunately, few models exist to illustrate for them what the school of the 21st century can look and feel like.

As the founding co-principals of the NYC iSchool, we wrote this book to introduce a promising and scalable model of what schools can become and how schools can and should redefine themselves. The iSchool model is successfully merging the pedagogical ideal of meaningful and relevant learning experiences that teach big ideas and valuable skills, with the realities of accountability, academic preparation, and adolescent development. As important as the iSchool model itself, however, is the habit of innovation the school has developed to constantly ask “Why?” and “What if?”—to question what has always been, and to shift the focus from what's easiest and most efficient for adults or the system. Instead the focus is on building an experience for each student that is personalized and that provides the range of experiences that will truly equip him or her with the academic foundation required for success in higher education and the critical 21st-century skills required for success in life.

In Part I of this book, we focus on how we arrived at the vision for the school and the context in which it was created. The chapters in Part II focus on one of the four areas, or levers, of change: curriculum, culture, time, and human capital, and provide illustrative examples from the iSchool's implementation. We show how each of these areas can be rethought and can serve as a driving force for school transformation and ongoing innovation to meet the changing needs of students. Part III offers a hands-on guide that we hope other educators will find useful as they engage in the school transformation process. For convenience the activities are also available for download on www.tcpres.com. These exercises offer guidance for individual or collaborative planning, suitable for new school design

or the transformation of existing schools. Following the guide step by step, a school leader can rethink all aspects of transformation; or, activities can be selected specifically to support rethinking of the individual levers.

While many popular existing books focus on the theory of 21st-century learning or highlight case studies of 21st-century learning, few books provide the “how-to” of 21st-century learning. This book offers school practitioners—school and district leaders, teacher leaders, preservice leaders, school designers, and instructional technologists—practical guidance for the key areas of change necessary for 21st-century schools.

We hope that this book will encourage school systems and school leaders to begin to ask how they can transform their schools, how to become systems of ongoing innovation, and how to continually improve and evolve to meet the needs of their changing student populations. It is our goal for this book to push school leaders’ thinking, forcing them to ask the right questions, to rethink the practices they have been implementing, and to adopt a habit of innovation.

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