

Introduction

WHY WE WROTE THIS BOOK

We wrote this book because it is vitally important that education respond to the dramatic changes taking place around the globe. You can't look at the modern world without recognizing that something really big is happening in the way life is lived—the way we work, the way we play, the way we communicate, the way we view our fellow citizens, and the way we learn. The 21st century is a fundamentally different environment that is demanding completely new ideas for how things get done. These sweeping changes are occurring so rapidly and are of such magnitude that education must quickly adapt or face the very real prospect of becoming irrelevant. For example, at a recent leadership institute for a diverse group of superintendents from across Texas, an urgent concern was raised by those in attendance that unless drastic changes are made, public education has less than a decade before serious problems will emerge. All of the superintendents agreed.

It is absolutely critical that everyone involved in education realize that change is not optional for schools today. But embracing the kind of fundamental and pervasive change that is needed to keep schools relevant in the world of the 21st century is a real problem for educators because schools have operated the same way quite successfully for such a long time. The problem is TTWWADI.

THE PROBLEM OF TTWWADI

It is amazing how many things we do from habit. Once we discover a way to be successful at something, it's human nature to latch onto the process that yielded the positive result. After we put forth the effort to make a decision to behave in a certain way, or perform a task at a specific time, or follow a particular procedure to do a job, life becomes much easier when we continue to follow the steps that lead to our success. In his book, *Future*

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Shock, Alvin Toffler (1970) calls these habits programmed decisions that were made so long ago and repeated so many times that they have become rote. He uses the example of a commuter who long ago discovered by a painful process of trial and error that the best time to leave for work was 7:35 a.m. Now, years later, that commuter has left at that time so often that he no longer even thinks about it. In fact, he can't even remember what the reasons were for leaving at that time. All he knows is that if he leaves at 7:35, he'll get to work on time. No thinking is required. And that's the point—he did the thinking long ago, discovered a way to be successful, and now just repeats the steps that led to his initial success. It's quite literally a no-brainer.

What is even more amazing is how we can accept and internalize the decisions made by others. We join an organization or work for a company and find ourselves doing things without really knowing why. Everyone continues to do things a certain way because it's been done that way for as long as anyone can remember. Besides, it's much easier to keep following the same path than it is to try to change things. What is remarkable about this is that the reasons for doing something in a particular way can be lost altogether because the original decisions were made so long ago. Consider the following example of how continuing down the same path for a long time can become so entrenched, not only is the original rationale lost, it no longer applies.

Today in North America, the spacing between the rails on railroad tracks is always 4 feet, 8 1/2 inches—a rather odd and seemingly arbitrary number. One legend as to why this particular spacing is used is because that's the rail spacing they used to build the railroads in England, and English expatriates built the railroads in the new world. So why did the English use that measurement for the spacing? It was because the English railcars were built by the same people who built the horse-drawn wagons in the pre-railroad era. That's the axle width wagon makers had always used, so they just kept on using it when they built the first railroad cars. Why did the wagon makers use that particular axle width? They did this because, if they used any other axle spacing, the wagon wheels would break on the sides of the established wheel ruts on English roads. So, where did those old rutted roads come from? The first long-distance roads in Britain and Europe were built by Imperial Rome for the use of the Roman military, and they have been in use ever since. Why did the Romans use that particular axle spacing? That was the width of the two horses that were used to pull the chariots. Thus, the North American standard railroad track spacing of 4 feet, 8 1/2 inches derives from the original specification for an Imperial Roman war chariot.

And there's more. There's a new twist to the story about railroad track spacing and horses' behinds. When we see a space shuttle sitting on its launch pad, there are two big booster rockets attached to the sides of the main fuel tank. These are solid rocket boosters, or SRBs, which are made

at the ATK Thiokol Propulsion factory in Utah. The engineers who designed the SRBs might have preferred to make them a bit fatter, but the SRBs have to be shipped by train from the factory in Utah to the launch site in Florida. The railway line from the factory runs through various tunnels in the mountains. The tunnels are slightly wider than the railroad track, and the railroad track is about as wide as two horses' behinds. So, a specification for a major design feature of what is arguably the world's most advanced transportation system was determined over 2,000 years ago by the width of two horses' behinds.

What is important to note is that the original decision that led to the specification for the space shuttle propulsion system was made in a world where railroads and space travel were never considered. Although it may have made great sense to use that specification in ancient Roman times, there is no compelling reason to use it today. In fact, there are compelling reasons for using a completely different measurement today that would be of much greater utility for modern purposes.

Whether this is the true story or not has been lost in the annals of history, but we think the story of the development of the spacing of railroad tracks is an apt metaphor for the public school system. The way our schools are designed, the way they operate, when they operate, and the way teaching is accomplished are all based on decisions that were made a long time ago. Many of those decisions originated in a time before computers, before television, before airplanes, before satellites, and before brain research. Today's public education system originated in an era when more than 90% of young people still lived on farms or in rural areas. Consequently, education was institutionalized as a seasonal enterprise. Schools adopted the six-hour day and the nine-month calendar to accommodate farm life. Summers were reserved for harvesting crops and other agricultural activities. Even as we progressed through the Industrial Age of the 20th century, many of the attributes of schools for agricultural life persisted. More astounding is that many of these attributes persist today. And similarly, many of the attributes of Industrial Age schools persist in today's schools in the world of the Information Age. Just like the spacing of the rails for our trains, the school system is based on decisions that were made for another time.

An important question to ask is why hasn't education changed as the world has changed around it? How can you explain the steadfast refusal of most people in education to embrace anything more than superficial changes to the way schools operate? We perceive that the school system is under the influence of a powerful force that compels it to continue on its current course. This is a force so potent that few have been able to break free of its grasp. What is this force that is making education so impervious to change? It's TTWWADI, and it has awesome power over people. What exactly is TTWWADI? It stands for **That's The Way We've Always Done It**, and it is a mindset that develops as people form habits of behavior, both

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personally and professionally. Over time, TTWWADI becomes a powerful force that thwarts change as new people embrace doing things the way they have always been done without examining where the original decisions came from. People just accept the preexisting mindset because it's the path of least resistance. Once a course of action is determined, staying on that course becomes habitual.

Take a good look at our education system and you will quickly discover that much of what happens in schools today is done from habit. The school system runs on an enormous number of programmed decisions that were made by people who aren't around anymore. Those people who shaped the school system into what it is today did their thinking in another time and discovered ways to be successful in educating children for a world that no longer exists. But because of the incredible power of TTWWADI, the people currently running schools continue to repeat the steps that lead to the system's past success. And they unconsciously adopt the long-established thinking that lies behind why our schools function the way they do. Just think of words like classroom, teacher, instruction, lesson, textbook, and test. These terms don't even have to be defined for new educators because it is assumed that everyone knows what they mean. For the vast majority of people, working in the school system today is a no-brainer. They work very hard and with great passion in very difficult conditions, but they don't have to think hard about how the system operates because it's been that way for such a long time.

Now this is not a problem when things don't change very much or change very quickly. That was the case for the early and middle parts of the 20th century, and at that time schools did a good job of preparing students for the rest of their lives. However, as we entered the latter part of the 20th century, the world began to experience increasing change due to rapidly growing technological development. But as the world began to shift to a totally new life experience, schools continued on as before. As a result, schools started to encounter more and more difficulties in achieving success in teaching kids. Today, schools are having serious problems. The entire school system is straining under the pressure being exerted on it by a world on the move. There is mounting evidence that the schools designed for the 19th and 20th centuries are not working well in the modern digital world. But remarkably, there is no widespread panic among educators, no anxiety over the 21st-century challenges facing education, no huge concern about the relevancy of what and how teachers teach. In fact, there is not even any real discussion of these pressing issues at all. Instead, demonstrating the extraordinary power of TTWWADI, most people working in the school system carry on with business as usual.

This simply cannot continue. We cannot carry on preparing students for the farms and factories of yesterday while the world jumps to light speed with biotechnology, nanotechnology, neurotechnology, global high speed wired and wireless networks, and incredibly powerful personal portable devices. We strongly believe that schools must prepare kids for the world

of tomorrow—the world where they will spend the rest of their lives. So we have been inspired to add our voices to the call for substantial change to our schools—change that needs to begin immediately, if not sooner!

A SUMMARY OF WHAT WE ARE TRYING TO SAY

The new digital world is having a profound impact on modern students. They actually think differently than older people who did not grow up in the digital environment. Educators must adapt their approaches to instruction and the organization of their schools to address this new reality if they hope to engage students in learning today and into the future.

We want our readers to understand and believe that there are many ways to organize high schools—not just one. We need our readers to understand and believe that the industrial model is not the standard school suitable for most students. We want our readers to understand that all the other models described here are not merely “special” for small numbers of “special” students. We need our readers to understand that there should be no “base,” “standard,” “normal,” “conventional,” or “traditional” high school. In creating new high schools, our assumptions must start from scratch every time for every community.

This book is not a comprehensive catalog of high school models from which to make selections. Rather, it is intended to provide illustrative examples exploring viable possibilities. There are clearly many variations on the models described, not to mention many other models we’ve yet to imagine. The challenge is not just to find new ways to make high schools, but also to muster the courage to seek them out.

It is clear that the industrial model high school is ill suited to the needs of most 21st-century students. If we are going to prepare our students for the world that awaits them beyond school, rather than the world we are familiar with, we must transform or close the industrial schools we have and stop building more—and we need to do it now!

There is little risk in pursuing new ideas for high schools. Industrial model schools have served students increasingly badly for decades. For example, in the United States we graduate only about two-thirds of all high school students. In urban districts with substantial low-income or minority populations, we graduate less than half. And many of those who do graduate leave academically deficient, unprepared for the world that awaits them after school and requiring remedial instruction to be able to survive in college and life. It is a far greater risk to stick with what we already know does not work rather than to explore new alternatives.

The future of public high schools is not assured. Given the statistics we cite later in the book, growing worldwide competition, mounting political pressures, and the emergence of truly viable alternatives, we should not assume that high schools as we’ve known them for generations can or will survive for another decade.

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There are many great ideas and examples for making more effective high schools, including many that have been around for decades. The issue is not figuring out what *might* be done, but having the courage to do it.

This is not about funding. The industrial model school is costly to build and costly to operate—and considerably more costly when you consider the percentage of kids it fails. The related social costs of its low graduation rate are immense. Entire cities are being shaped, and property values being affected by people fleeing dubious urban center schools to enroll their kids in suburban schools they perceive to be better. As fundamentally contradictory as it may seem, we have urban school districts with declining enrollments in cities with growing populations. All the models examined here can do more for less—the issue is courage, not money.

In *The March of Folly* (1984), American historian Barbara W. Tuchman set three conditions for a folly:

- Doing something contrary to your own self-interest,
- Doing it despite readily available knowledge that it is contrary to your own self-interest, and
- Doing it when you have a choice to do something else.

She cited several examples:

- The Trojans taking the wooden horse into their city.
- The Renaissance popes provoking the Protestant secession.
- The British losing America.

Will some historian in the middle of the 21st century look back on our educational system and its high schools and observe that we knew there were problems, knew how to remedy them, and had the means to do so—but did not? We hope not. Instead, it is our desire that this book will, in some small way, inspire educators to respond positively to the challenges facing education in the 21st century. It is our sincere desire that this book will provide a useful resource for educators wanting to explore new ways of organizing schools to meet the needs of modern students.

Please note: Although we have focused on ideas for high schools in this book, much of what we have written also applies equally as well to elementary and middle schools.

Accompanying Web Site

A Web site in support of this book is available at www.nomorecook-icutterschools.com. This site contains a blog, articles, downloadable handouts, photos, videos, podcasts, recommended readings, additional materials, and contact information. Please visit the Website for further resources, links to valuable education sites, and interesting articles related to teaching, learning, and school design.