

CHRIS LEHMANN | ZAC CHASE

BUILDING School 2.0

How to Create the Schools We Need



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Building School 2.0

HOW TO CREATE THE SCHOOLS WE NEED

Chris Lehmann and Zac Chase

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FIRST EDITION

Chris: For Jakob and Theo—this book represents the best ideas I've had about what I hope school can be for you. And for Kat, without whom I would never have done any of this.

Zac: For my parents, who taught me there are many wonderful ways to learn. And for my Uncle David.

About the Authors

Chris Lehmann is the founding principal of Science Leadership Academy, a progressive science and technology high school in Philadelphia, Pennsylvania. Considered a national ed-tech thought leader, Chris was named Outstanding Leader of the Year by the International Society of Technology in Education in 2013 and in 2014 was awarded the prestigious “Rising Star” McGraw Prize in Education.

Science Leadership Academy (SLA) is an inquiry-driven, project-based, one-to-one laptop school that is considered to be one of the pioneers of the School 2.0 movement nationally and internationally. A partnership with Philadelphia's Franklin Institute science museum, the school was recognized by *Ladies Home Journal* as one of the Ten Most Amazing Schools in the United States and has been recognized as an Apple Distinguished School. SLA has been highlighted on the PBS *NewsHour* as well as a broad range of publications such as *Edutopia*, *Education Week*, and the *Philadelphia Inquirer*.

In 2013, Chris spearheaded the drive to expand the SLA model to a second Philadelphia high school, SLA @ Beeber, and has signed on to start an additional Philadelphia middle school. He continues to work with schools and districts all over the world as a consultant. In 2013, he cofounded the non-profit Inquiry Schools with Diana Laufenberg, where he serves as superintendent and chair of the board. The non-profit's mission is to expand SLA's inquiry-driven approach to more schools.

Among his many honors, Chris has been named by the White House as a Champion of Change for his work in

education reform, heralded as one of Dell's #Inspire100 (one of the one hundred people changing the world using social media), named as one of the “30 Most Influential People in EdTech” by *Technology & Learning* magazine and received the Lindback Award for Excellence in Principal Leadership.

A popular speaker, Chris has spoken at conferences all over the world, including TEDxPhilly, TEDxNYED, the National Association of Secondary Schools Conference, SXSW, SXSWedu, the Building Learning Communities conference, the International Society of Technology in Education, and the International Conference on Technology and Education, and at the Central and Eastern European Schools Association Conference. Chris has written for such education publications as *Principal Leadership*, *Learning and Leading with Technology*, and the *School Library Journal*. He is coeditor of *What School Leaders Need to Know about Digital Technologies and Social Media* and the author of the education blog Practical Theory.

Chris received his B. A. in English literature from the University of Pennsylvania and his M. A. in English education from Teachers College, Columbia University. Chris returned to his native Philadelphia to start SLA after nine years as an English teacher, technology coordinator, girls' basketball coach and Ultimate Frisbee coach at the Beacon School in New York City, one of the leading urban public schools for technology integration. He is perhaps most proud to be father to Jakob and Theo. You can find Chris on Twitter at [@chrislehmann](https://twitter.com/chrislehmann).

Zac Chase loves learning and teaching. For eight years, Zac taught 8-12 grade students English—first in Sarasota, Florida, and then in Philadelphia at Science Leadership Academy (SLA). He is a National Fellow for the Institute for Democratic Education in America. An original Freedom

Writer Teacher, he's worked with teachers nationally through the Freedom Writers Foundation. Additionally, Zac works with teachers, schools, and school districts across the country as a consultant focused on reflective practice and the thoughtful combination of pedagogy and technology for teaching and learning. He has also worked internationally with schools and systems in Canada, Kenya, Malaysia, South Africa, and Pakistan to consider the intersection of learning, inquiry, reflective pedagogy, technology, and project-based learning. He is driven to investigate the role and importance of creativity, improvisation, and care in teaching and learning.

When not engaged directly in the work of helping schools and teachers improve their practice, Zac has his head down in a book, a blog, or the latest piece of education research.

Zac earned his M. E. in education policy and management from the Harvard Graduate School of Education, his master of teaching and learning in curriculum and instruction at NOVA Southeastern University, and his B. A. in English education from Illinois State University. A founding cochair of SLA's EduCon, Zac has presented at conferences around the country, including FETC, NCTE, IntegratedED PDX and SF, and ISTE.

Zac has written for the *Journal of Adolescent and Adult Literacy* and the *Education Week* blog, and cowrote and edited the *New York Times* bestseller *Teaching Hope*. He blogs regularly at autodizactic.com and has taught and performed improvisational comedy since 1999. He works as an instructional technology coordinator in the St. Vrain Valley School District in Colorado, where he works with other district leaders as well as within schools to help leverage technology in support of learning and teaching. Through 2014-2015, Zac is on detail to the U.S. Department of Education Office of Educational Technology

as a ConnectED Fellow. He is committed to creating deep, authentic, and engaging learning for all through the innovative use of resources. You can find him on Twitter at [@MrChase](#).

About Science Leadership Academy

How do we learn?

What can we create?

What does it mean to lead?

These three essential questions form the basis of instruction at the Science Leadership Academy (SLA), a Philadelphia high school opened in September 2006. SLA is built on the notion that inquiry is the very first step in the process of learning. Developed in partnership with The Franklin Institute and its commitment to inquiry-based science, SLA provides a vigorous, college-preparatory curriculum with a focus on science, technology, mathematics, and entrepreneurship. Students at SLA learn in a project-based environment where the core values of inquiry, research, collaboration, presentation, and reflection are emphasized in all classes.

The structure of SLA reflects its core values, with longer class periods to allow for more laboratory work in science classes and performance-based learning in all classes. In addition, students in the upper grades have more flexible schedules to allow for opportunities for dual enrollment programs with area universities and career development internships in laboratory and business settings, as well as with The Franklin Institute.

At SLA, learning is not just something that happens from 8:30 A. M. to 3:00 P. M., but a continuous process that expands beyond the four walls of the classroom into every facet of our lives.

Acknowledgments

The book exists because of the incredible spirit, joy, and hard work of everyone at the Science Leadership Academy—students, teachers, parents, and partners. The book also would never have happened without our friend and colleague Diana Laufenberg. She puts up with us both, and her friendship and counsel make us both better, and many of the ideas expressed in this book were workshopped with Diana. We probably need to apologize to her for all the stress this book caused her, just because she's our friend.

The book is peppered with references to friends and mentors we've known and collaborated with over the years, whose ideas and passion have informed our ideas and made us better teachers—folks like Mike Thayer, Chris Johnson, Jose Vilson, Audrey Watters, Tom Sobol, Bud Hunt, Will Richardson, David Warlick, Gary Stager, Sylvia Martinez, Jaime Casap, Marge Neff, Shelly Pavel, Janet Samuels, Melinda Anderson, Ira Socol, Pam Moran, John Spencer, David Jakes, Christian Long, Trung Le, Marilyn Perez, Simon Hauger, Lisa and Michael Clapper, Darlene Porter, Elyse Eidman-Aadahl, Paul Oh, Christina Cantrill, Dean Shareski, Dan Meyer, Stephen Stoll, and Ruth Lacey.

This book owes an incredible debt to the most patient editor in the world, Kate Bradford, and all the folks at Jossey-Bass Wiley who were incredibly patient with two very slow writers. Finally, thank you to our families who have put up with us through all the drafts. For Chris, that means a special thank-you to my incredible wife, Kat Stein, who probably hopes I never write another book ever again.

These pages also owe their existence to the students, teachers, and families of SLA. The work and learning they

do together each day and through the years shows that these ideas are more than theories. They live and breathe these ideas as practices to be refined and reflected on toward building a better future and society.

Finally, thank you to those teachers in our lives throughout our years as students. To those who took the time to know us, to engage our curiosities, and to help us discover our worlds and the world at large: we stand on your shoulders and do what we can in hope of honoring your work.

Foreword

It's an unusual high school that attracts teachers from across the country to work there. When the first SLA opened in 2006, I read along from my home in Flagstaff, Arizona, as Chris told the story of turning a Philadelphia office space into a school. The next year, when Zac left students he cherished in Florida to join the SLA faculty, I too thought about what it might mean to leave a place I loved to also walk that path.

While adventurous, I am still a Midwesterner at heart. Instead of just taking the leap, I dipped my toe in the water by attending the first-ever EduCon in January 2008. It was there that I first met Zac and Chris in person. The conference was intimate and thought-provoking, and as I headed home to Arizona I already had an inkling of what would happen next. By April, Chris offered me a position teaching kids history for the next year.

Joining the staff of Science Leadership Academy was like coming in from the cold for a little while. The environment for learning was superb, the teachers were and continue to be the most densely talented teaching staff, and there was still so much to vision and create as the school grew. Our days were spent minimizing the administrivia that can overwhelm the job and focusing on how to craft meaningful educational experiences, how to support the students and ourselves appropriately, and how to build the systems that would foster this environment. It was a heavy lift for all of us, but so worth the effort.

The school continues to be a magnet for people who feel that something has been missing from education, and teachers continue to pack up in other states to take jobs

there. This book is the record of that work, the result of thousands of hours of verbal banter, arguments, jokes, heartfelt confessions, and frustrations, all of which breathe life into the school we all needed—students, parents, and staff alike.

During my four years there, I spent countless hours with Zac and Chris taking care of the administration and long-term planning for the school. Our work flow was definitely unusual. We spent (too) many late nights working around Chris's desk, cycling between watching *West Wing* clips on YouTube, sharing thought-provoking blog posts, quoting pithy tweets, being full-on ridiculous, and cranking out the work. I could tell you that we were efficient, but I'd be lying. Effective, yes, but efficient, no. Though the two of them may tell you that I was the “least fun” one, always trying to keep us on task, I stretched myself greatly while I was there with them. The farm kid born of efficiency had to stop and question not just whether the work was getting done, but whether our work honored the people we were working and learning with along the way. We were the model of distracted productivity, and it was grand.

Building School 2.0 is born of that distracted productivity, a blend of humanity and scholarly inquiry that fuels the daily dialogue at SLA. When we had a particularly challenging stretch, we truly would search to find the value of each school day. When we started taking ourselves a little too seriously, we reminded each other that humility matters and to not become ego-invested in our work. On those really amazing days when the teaching and learning flowed ever so smoothly, we reveled in how lucky we were to be teachers. And on almost a daily basis, we would be silly—and I mean really silly, the kind that leaves you teary-eyed and with sore abs. This book captures so much of what we cherish in that school environment, so much of what we are

all still working to sustain at SLA and create in new learning environments.

Building School 2.0 is not a checklist of measurables or quantifiable data. The ninety-five “theses” here are the conversations to have with your friends over dinner, questions you can explore with your colleagues throughout the year, challenges to construct more modern and humane spaces for our most cherished resource: our students. When pondering the idea of School 2.0, stop arguing about the tests and the standards and the apps. Start considering that within this book are the beginnings of a dialogue that can change the way you create learning spaces for all the people at your schools. A dialogue that needs to be as unique and varied as the educational spaces that inhabit our world.

Chris and Zac have taken painstaking care to craft for us a window into a school committed to a set of classic ideals powered by modern tools, a place willing to critically question its own best ideas. While the three of us no longer work in the same space, reading this book was like coming in from the cold again. This is what it was like to sit in that office for four years while bantering, celebrating, crying, laughing, debating, and working. I miss it terribly, but this book takes me to a timeless place where that ethos can live and inspire more learning communities.

Diana Laufenberg

1

School Should Mirror the World as We Believe It Could Be

This book is borne of a spirit of hope that we can build healthier, more relevant, more caring schools that, in turn and in time, will help to build a healthier world.

According to Wolfram Alpha, there are fifty-nine million K-12 students in the United States.¹ That's fifty-nine million families' dreams, fifty-nine million young people whose lives are still loaded with potential, fifty-nine million young people whose stories have yet to be written, fifty-nine million students who deserve to be encouraged to believe, "You can," before having someone tell them, "You can't." For that matter, the over three million teachers² all over this country also deserve someone to tell them "You can," before having someone tell them, "You can't."

And yet, so much of what happens in school happens because we believe that we must prepare children for the world as it used to exist. Never mind that we have no idea what the world will look like for kids in kindergarten right now—and we might not even know what it will look like for the kids in ninth grade—we continue to replicate the factory-age structures and compliance-based codes of conduct that have governed school for decades because it "feels like school" to parents and politicians and school administrators all over the world.

Worse, in the twenty-first century the massive technological changes that have vastly changed our society have had little effect on our schools; in too many places, the technology is merely being used as the next, best filmstrip, or worse, a better way to quiz and test our students, rather

than as a way to open up our classroom windows and doors so that students can learn what they need to, create what they want, and expand the reach of their ideas to almost limitless bounds.

In 1518, Martin Luther nailed ninety-five theses to the door of the church. He envisioned a world where the church did not act as a go-between—and in his mind, a barrier—between God and man. We need to understand now that school does not need to be a go-between—and, too often, it is a barrier—between students and learning. We can remake school so that students can feel more directly empowered to learn deeply alongside teachers who share a vision of the sense of joy that learning can unlock.

For our ninety-five theses, we ask you to suspend your disbelief that schools can be better than they are now. In fact, we ask you to suspend your disbelief that the world can be a better place. Each thesis in the text could lead to more questions, deeper discussion, more research, and, we hope, positive action. It is our hope that, individually, each thesis could help students and parents and educators to examine specific practices in their schools as they exist, and taken collectively, they can help communities create a new vision of school, built on the best of what has come before us, steeped in the traditions of progressive educators of the past hundred years, but with an eye toward a future we cannot fully imagine.

From Theory to Practice

- To prime your thinking as you move through the text, pause and take a moment to describe what you think school should be doing, what its role is in a modern world, and what success looks like. Let this thinking be a signpost as you explore this book.

- Start a conversation. As important as it is to think deeply about your own vision of what school can and should be, this book is designed as a conversation starter as well. As a thesis strikes you as relevant to your own place of learning and teaching, consider how you might use it to begin a larger conversation. Could you get time in a faculty meeting or a Parent-Teacher Association meeting, use it to inspire discussion as you have coffee with a colleague, or track key quotations and share them with a Listserv? Be on the lookout and be mindful. The more stories we share, the deeper our thinking will become.



2

We Must End Educational Colonialism

Science Leadership Academy (SLA) was started by a group of educators with the idea that it would be the kind of school we would want our own children (real or theoretical) to attend. Our belief in an inquiry-driven, project-based, technology-rich approach to learning was not just for “other people's children,” but for our own as well.

It is important to say this because there are a lot of powerful people right now who are advocating for a pedagogy in our publicly funded schools that they don't find good enough for their own children.³ Some of these powerful people are even running networks of schools that have a pedagogical approach that is directly counter to the educational approach of the institutions they pay for their own children to attend. Moreover, these same powerful people tend to get upset when asked about the disconnect, saying that that question is off limits.

We don't think it is.

We should ask why people of power advocate for one thing for their own children and something else for other people's children, especially when those other children come from a lower rung on the socioeconomic scale or when those children come from traditionally disenfranchised segments of our society. It is, in fact, a very dangerous thing not to question.

Because we've done this before in America and around the world. Whether it was the United States government forcing Native Americans into boarding schools, which decimated families and societies in the name of assimilation, or any of the many global examples of destruction as explorers claimed “new worlds,” history is rife with examples of disenfranchisement through systematic cultural colonization—each ending tragically.

For us, when you ensure that your own child has an arts-enriched, small-classroom-sized, deeply humanistic education and you advocate that those families who have fewer economic resources than you have should have to sit straight in their chairs and do what they are told while doubling and tripling up on rote memorization and test prep, you are guilty of educational colonialism.

And it's time we start calling that what it is.

The ideas in this book represent our best thoughts on education for all children, not just some children. If we are to truly engage in modern pedagogical education reform, it must be a movement of the cities and the suburbs, of public and private and charter schools, and for children of all colors and classes. To do anything else is to ignore the elephant in the room—that we are rapidly moving further and further into a bifurcated system in this country where

the education rich children get is vastly different from the education poor children get.

We—all of us—must be committed to ensuring that the income of a child's parents or the color of a child's skin does not prevent the child from engaging in a profoundly humanistic, deeply empowering modern education. And if we allow those in power to advocate for a brand of education for other people's children that they would never allow for their own children, we will only perpetuate the worst abuses of our history.

From Theory to Practice

- Start the conversation. The best way to allow educational colonialism to persist is to remain silent about its presence. The best way to fight it is to start conversations across classrooms, schools, and districts that share our practices, our learnings, and our resources. Seek out colleagues in online and physical spaces that may feel foreign to you, and begin a conversation about what learning and teaching can look like.
- Make the conversation come from a place of questioning. If the conversations in which we engage around education are nothing more than us making declarative statements about the way things should be and what others need, we're not setting ourselves up to learn. By asking people who hold different perspectives to share their understandings of needs and their ideas for what will best serve to meet those needs, you're opening up to new understandings.



3

Citizenship Is More Important Than the Workforce

There's a movement afoot that says school should prepare kids for the twenty-first century workforce. And on its surface, that seems like a good goal. Who could argue with that? Kids are going to need jobs when they graduate, especially in a time when economic stability seems precarious at best.

But focusing on workforce development sells our students short. It assumes that the most we can hope for our students is a life of work when there is so much more to learn. The purpose of public education is not the creation of the twenty-first-century workforce, but rather, the cocreation—in conjunction with our students—of twenty-first century citizens. “Worker” is, without question, a subset of “citizen”; and if we aim for “citizen,” we'll get the workforce we need, but aiming only for creating workers won't get our society the citizens it needs.

A public education centered primarily on workforce development will put a high premium on following directions and doing what you're told. A public education centered on citizenship development will still teach rules, but it will teach students to question the ideas underlying those rules. Workforce development will reinforce the hierarchies that we see in most corporate cultures, whereas a citizenship focus will teach students that their voices matter, regardless of station.

It's not only about what society needs, it's also about what students need. We can completely change the lens of “Why do we need to study this?” when the answer deals with being an informed and active citizen as opposed to what we need to know to do our work. Most people don't need to

know calculus, the periodic table of elements, the date of the signing of the Magna Carta, or *Hamlet* to be a good worker. But you do need to understand statistical analysis to read fivethirtyeight.com and make sense of the sociopolitical conversations there. You do need to understand basic chemistry to understand how an oil spill from the *Exxon Valdez* affects the region. Understanding how England evolved from a pure aristocracy to a constitutional monarchy, which helped sow the seeds of American democracy, helps us to make sense of our own country's history. And understanding how Hamlet chooses action or inaction in the famous "To be or not to be" soliloquy might help us make better choices in our own lives. The goal of a citizenship-driven education exposes students to ideas that will challenge them, push them, and help them to make sense of a confusing world.

And more to the point—when we do this, we don't lie to kids when we say that's what high school is for.

Our society is changing, and there are some serious warning signs that our economy may be fundamentally shifting in ways that will make it more and more difficult for education to be "the great equalizer." Children across the socioeconomic spectrum are realizing that the economic "sell" of public education isn't ringing true. As college costs creep over \$200,000 for private four-year colleges and over \$100,000 for public colleges (for example, in 2014 Penn State's costs, with room and board, were \$28,000 per year in state⁴) and as more jobs move to labor markets that do not have the high wages of the United States, the idea that all kids who work hard in high school will go to college and have economic success in life is an uglier and uglier lie.

We're going to have some deeply challenging problems to solve in the near future, and we think that we're going to

be faced with hard choices about our lives. We want our schools to help students be ready to solve those problems, to weigh in on those problems, and to vote on those problems. That's why history and science are so important. It's why kids have to learn how to create and present their ideas in powerful ways. It's why kids have to become critical consumers and producers of information. And hopefully, along the way, they find the careers that will help them build sustainable, enjoyable, productive lives.

We want to be honest about why we teach what we teach. We're tired of schools and politicians implicitly promising that the result of successful schooling is high wages. And we're tired of too many adults forgetting everything else that goes into helping people realize their potential in the process.

Teaching kids that hard work in school will mean more money is a shortcut and an example of the shoddy logic that doesn't ring true to many kids. Most kids—especially in our cities—know someone who did everything they were supposed to do but still struggled to achieve in their lives after school.

Teaching kids that hard work in school will help them develop skills that will help them be more fully realized citizens and people is—without question—a harder argument to make, but it stands a much better chance of being true.

From Theory to Practice

- Ask the question, “How does my ‘class/school/district/home’ help kids to become fully realized citizens of the world, and how does it not?” Examine practices that are unhelpful in fulfilling that goal and work to change them.

- Work to create opportunities for students to engage in civic-minded projects both inside and outside the school so that students can see the work they do in the wider world.



4 Build Modern Schools

We talk a lot about what to call this movement in education. It does seem a little ridiculous to call this the “twenty-first century schools movement” when we're already over a decade into the twenty-first century and we don't really know what we're doing yet. But naming is important, and we should be able to talk meaningfully about what this movement is trying to do and what the goal of all of this actually is. For ourselves, we want to be part of a school movement that recognizes the best of what has come before us and marry that to the best of what we are today. And we think we have an idea of how we want to talk about that.

We want to create modern schools.

For us, the notion of the modern school cuts straight to the heart of what we are trying to do. Modernity is something that we are always striving for, always reinventing, always coming to terms with. We understand the dangers of modernity slipping into post-modernity. This is and should be a valid concern. It should also be a fire under those who are charged with asking, “Are we creating the schools we need today, or have they slipped into yesterday?”

Smart modernists understand that they stand on the shoulders of giants. Modern schools should not denigrate

the past, nor should they ignore what has come before them. The modernist learns from history and builds upon it. Those are the goals we want to have. And we believe that is a powerful lens for our children. Moreover, the idea of modern schools encompasses not just the tools they use, but also the life they lead and the challenges they face. It recognizes that school is about now and their future while honoring and learning from the past.

A modern school movement does not assume that because we learned a certain way when we were kids, our children must learn the same. A modern school movement does not assume that what was good for us will automatically be good for our kids, nor does it assume that just because we did something a certain way in the past that it holds no value in the future. The modern school movement does not have to focus solely on tools or skills; rather, it can also focus on ideas and people and the lives we live today.

We want to create modern schools, in and of our time, for our time, for these kids.

From Theory to Practice

- Examine one way your life has changed over the past ten years due to a change in society. Is there a parallel to that change in your school? Could there be?
- What is a process in your teaching that is grounded in older practice that, while still worthwhile, could be reinvigorated by examining its relevance to the world we live in today?

