Excerpted from

Reinventing Project-Based Learning
Your Field Guide to Real-World Projects in the Digital Age

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Reinventing Project-Based Learning offers educators an accessible guide for maximizing the benefits of project-based learning in today’s technology-rich learning environment. This reader-friendly book speaks directly to educators, administrators, and professional development specialists who want to transform learning into a more active, student-driven experience, using technology tools for inquiry, collaboration, and connection to the world beyond the classroom. Examples from educators in many different countries showcase this new vision of instructional design.

This excerpt provides an introduction and an broad-picture overview.
INTRODUCTION

“I’ll Never Go Back”

For years, a high school humanities teacher named Adam Kinory thought he was doing a fine job of incorporating technology into his classroom. As computers became more widely available to his students, he made subtle shifts in assignments and expectations to take advantage of new tools. Word processing enabled students to revise their writing without the tedium of repeat typing. The Internet opened new research opportunities. Graphics software made for more compelling presentations. A class Web site helped Kinory communicate about deadlines.

But looking back on his first decade in the classroom, he can see that those shifts did not make for a fundamental change in teaching or learning. He was merely layering technology onto the teaching methods he had learned a decade earlier. “None of that was a leap,” he admits. “I didn’t really change what I was doing in the classroom.”

The “big leap” happened soon after Kinory gained some hands-on experience using digital media, including video cameras and editing software. That experience, which came about through his participation in the Digital Edge Learning Interchange, got him thinking about the role of multimedia in his classroom. Too often, he had watched his students turn off their critical faculties whenever he showed a movie. In particular, he wanted to better engage all students in his special education inclusion class, especially those who are strong visual or auditory learners.

Now, he began to consider a more active use of film—where students would behave more as directors and critics instead of as passive viewers. After all, many of today’s students are already savvy about making their own short films. Some upload their productions to sites like YouTube, or use their cell phones to create videos. Kinory’s typical student has a blog and belongs to several social networks. Why not build on this digital fluency to reinvent a project for the high school classroom?

Instead of asking students to write traditional thematic essays about the Scopes Monkey Trial, Kinory had them analyze a selection of film clips from *Inherit the Wind* that bring this era to life. He showed students how to embed digitized film clips directly into their documents, linking visual imagery with their written analysis. The assignment not
only deepened their understanding of literary theme, but also helped students to think more critically about media as they learned to analyze elements like lighting and blocking. When he asked students to reflect about the project, Kinory could hear them making stronger connections between what they were learning and their own world. (Kinory, 2003)

Both teacher and students had to navigate new ways of working together as the project unfolded, but it didn't hurt that students saw their teacher trying new approaches and taking risks as a learner. At the end of that first reinvented unit, Kinory received a career first: a letter of thanks from his students. If he needed more convincing that he was on the right track, that did it.

The transformation in Kinory's teaching style has been profound—and permanent. “It’s natural now for me to integrate technology. A few years ago, my students were surprised but reacted positively when I started using digital tools. Today, my students would react negatively if I didn’t teach this way. I’ll never go back,” he insists, “to the way I used to teach.”

Not every successful project ends with a thank-you note. Nonetheless, there are themes in Kinory’s story that echo in classrooms around the world. From California to Australia, from Singapore to rural Montana, more and more educators are making similar shifts. They recognize that digital tools are essential features of the environments in which today’s students are living and learning. What’s more, these educators see how technology opens opportunities to reinvent projects so that they become more authentically connected to students’ lives. When they succeed in designing an effective project, teachers are wise enough to recognize that they are also changed by their students’ success.

Kinory has continued to introduce new instructional strategies that meet learners squarely in their world, where he sees technology as “a fundamental building block of their experience.” When he teaches about point of view in the short story, for instance, he routinely streams audio clips from National Public Radio shows, such as “This American Life,” to illustrate key ideas. Some students are motivated to produce their own podcasts. Three were recently selected as winners in an essay contest sponsored by the NPR show “Selected Shorts.” Classmates and even other teachers “are starting to see these students in a new and more positive light,” Kinory says. (2007)

This book is about the journey that unfolds when teachers decide to move away from traditional teaching and toward this new vision of instructional design. It’s a learning journey—for teacher and student alike. For instance, you may decide to take advantage of digital tools for inquiry, collaboration, and communication to connect learners to one another or even to the world beyond the classroom. This endeavor requires learning about new and emerging technologies. You decide to give up the traditional teacher’s role of being the content expert, and that means learning new ways to engage with your stu-
dents. As a Texas high school teacher named Brandy Avant admitted, “Letting go of the silence was the hardest thing, but I realized we have to let students work together and help each other. Now, I get uncomfortable if my class gets too quiet.” She’s another who has vowed to “never go back” to her old style of instruction.

This is a journey that involves calculated risks. Many of the teachers you will meet in the chapters to come are like Adam Kinory—willing to try new strategies to meet instructional goals and reflective about wanting to improve their own practice so that all learners will succeed. Like him, many also turn to their colleagues as a “sounding board” for new ideas. He regularly brainstorms with a colleague he has come to trust for “helping me formulate critical questions to think about what I’m doing.”

Long before we began writing this book, each of us embarked on our own learning journeys that opened our eyes to new possibilities for digital-age instruction. Jane Krauss has seen her approach to teaching evolve during her 20 years in education. She has been a special and general education teacher, supervisor of preservice educators, curriculum writer, presenter, trainer, and director of professional development. In the elementary classroom, she was an early adopter of project-based learning and experienced the shift in what was possible when technologies became available to make projects more authentic, meaningful, and rigorous. Jane continues to work with educators around the world to explore the potential and promise of education technology. Suzie Boss, a journalist specializing in education, has spent much of the past decade observing effective teachers and learning from them about best practices. She has seen how innovative approaches to instruction can combine with new tools to engage learners and transform communities.

Specifically for this book, we have interviewed and observed dozens of teachers who have found success by reinventing the project approach to better meet the needs of digital-age learners. These educators work in all kinds of environments—some of which are more welcoming than others to new ideas for instruction. The educators come from all around the world, and their examples demonstrate how real-world projects can help diverse learners meet instructional goals in wildly different contexts.

Many of these educators feel like pioneers in reinventing project-based learning to take advantage of the opportunities that digital tools afford. Fortunately, they are also willing to share their insights and discoveries. In fact, many of those we highlight are active bloggers who make a point of sharing their learning journeys online so that others can join the conversation. The growing edublogger community provides teachers with increased opportunities to come together to offer improvements, share strategies and enhancements, and work more collaboratively to develop improved versions of promising projects.
STARTING YOUR JOURNEY

Where are you starting your journey? What has motivated you to consider new strategies for the classroom? Maybe you’re an old hand at project-based instruction, but now you want to incorporate new technologies to reach ambitious instructional goals. Maybe you’re a newcomer to the profession, looking for authentic project ideas you can’t find in a textbook. Perhaps your school is part of an initiative that is making new technologies available. Or perhaps you’re an administrator or technology specialist, working with a team of teachers on improving instruction across a grade level or subject area.

We start with no assumptions about your past experiences, your students’ ages or backgrounds, or the technology tools you have available. Regardless of your role or background, we assume only that you are open to new ideas—and that you like learning.

As we set out on this journey together, keep in mind the following:

- **Today’s students are up to the challenge.** The digital world already reaches every aspect of students’ lives. Many schools have not kept pace with the opportunities, but most students are primed to take advantage of these new tools.

- **Projects are worth the effort.** As a teacher, your world will change, and for the better. Veteran teachers often talk about how they feel rejuvenated as a result of reinventing projects. Many teachers we interviewed expressed the same idea: “I’m not doing the same old lessons we always did, and I’m excited because I’m learning.” Don’t be surprised if you become more passionate about teaching after taking this journey.

- **Students live and learn in the real world.** From a student’s perspective, there’s no substitute for the real world when it comes to generating interest in learning. At the end of the day, would you rather see your students dumping their “work” into the recycling bin, or talking about an authentic project in which they are driving their own learning? One science teacher, for example, compares his students to researchers working in industry and academia. At the end of a project, they may publish a monograph to share their original research or participate in a community symposium about science and ethics. They know that their work matters.

- **New contexts encourage the project approach.** New learning contexts set the stage for technology-rich, project-based learning. Teacher teaming, professional learning communities, and interdisciplinary instruction facilitate planning and design. New models for using technology, such as laptop initiatives, expand student access to digital tools. New communities of practice—such as the
expanding online community of edubloggers—help good project ideas travel and encourage teachers to reflect on what works. All of these factors help to set the stage for success with the project approach, and we highlight several promising models in the pages that follow. For example, Adam Kinory’s small New York public secondary school, the School of the Future in Manhattan, with about 100 students per grade, puts a premium on personalization, interdisciplinary learning, and collaboration. In this kind of setting, innovative instructional approaches and technology integration are not only encouraged, but expected.

**HOW TO USE THIS BOOK: TURN IT INTO YOUR OWN PROJECT**

Field guides are meant to be taken along on a journey. They help you focus your attention on the details that matter. And so it is with this book. It’s designed to help you navigate the fast-changing learning landscape of the digital age.

As you work your way through these chapters, use this book as your own learning project. Write in the margins. Turn down pages where you find ideas you want to borrow. Take time to explore the technologies we highlight. In other words, be an active learner who engages with your environment. That’s the kind of learning your students will experience as you begin designing and implementing effective projects.

This book has been designed to support your journey whether you are reading alone or working with a group of colleagues. Either way, we hope you find time to talk with others about what you are thinking and learning. Just as good projects involve teamwork, collaboration yields the best results for professional development. Collaboration can range from professional learning communities—which we encourage, and address in more detail in chapter 2—to more informal conversations. In the coming pages, we suggest many ways to open the door for dialogue, either in person or virtually. In addition, we offer a Reading Group Guide (appendix C) with more questions for discussion.

Just as your students arrive with varying levels of readiness, we understand that readers will have a range of entry points for reinventing project-based learning. Some readers will be more comfortable starting small, while others will be ready to dive into more complex projects, and we offer supports all along that spectrum. We have provided opportunities for you to assess your readiness, make choices, direct your learning, explore new ideas, and reflect on your experiences. Throughout the book, you will encounter suggestions for related reading and prompts that encourage you to pause and reflect. Look for these special features throughout the book:
Section I  ■  Anticipation

• **Spotlight:** expanded close-up of a teacher, school, or promising model
• **Your Turn:** suggestion for your own hands-on learning or for a collaborative activity to prompt deeper reflection among colleagues
• **Technology Focus:** expanded information about a promising technology to support your project success
• **Side Trip:** related readings or Web resources worth considering

At journey’s end, you can look back and see how far you’ve come—and decide where in the world you want to travel with your students next.

Here’s a quick preview of the topics we will explore together:

**SECTION I Anticipation**

**Chapter 1 Mapping the Journey—Seeing the Big Picture**
Assess your readiness to begin teaching with technology-rich, authentic projects.

*Technology Focus: Social Bookmarking*

**Chapter 2 Creating a Professional Learning Community**
Engage with colleagues, near or far, to build collaboration into project design and enrich your teaching practices.

*Technology Focus: Online Communities*

**SECTION II Packing Up**

**Chapter 3 Imagining the Possibilities**
Establish the conceptual framework for your project. Why do “big ideas” matter in project design?

*Technology Focus: Why Use a Wiki?*

*Technology Focus: Essential Learning with of Digital Tools, the Internet, and Web 2.0*

**Chapter 4 Strategies for Discovery**
How do you begin designing a project? A guided design process helps, whether you build a project from scratch or adapt an existing project plan to meet your needs.

*Technology Focus: Track Assets Online*
Chapter 5 Project Management Strategies for Teachers and Learners
Teachers and learners alike benefit from improving their project management skills.

Technology Focus: Project Management with Technology

SECTION III Navigating the Learning Experience

Chapter 6 Project Launch—Implementation Strategies
Get your project off to the right start by generating curiosity and preparing students for the active learning ahead.

Technology Focus: Screencasting

Chapter 7 A Guiding Hand—Keeping a Project Moving
Consider the critical roles of classroom discussions, technology use, and troubleshooting strategies in keeping the project moving forward.

Technology Focus: Podcasting

SECTION IV Expanding Your Circle

Chapter 8 Building Connections and Branching Out
Successful projects may take off in directions you did not anticipate. Imagine the possibilities for extensions and connections.

Technology Focus: Online Collaboration

Chapter 9 Making Assessment Meaningful
Near the end of the project, you put your formal assessment plan to use. With 21st-century projects, teachers are incorporating new approaches to make assessment more meaningful.

Technology Focus: Online Grade Books

Chapter 10 Celebrating and Reflecting
Culminating activities remind learners of where they have been and what they have gained along the way.

Technology Focus: Photo Sharing

SECTION V Unpacking

Chapter 11 Bringing It Home
Build time for reflection and sharing into the project life cycle to make the most of your investment in meaningful curriculum design.
Appendixes

Appendix A Essential Learning with Digital Tools, the Internet, and Web 2.0
Examine a wide array of digital tools through the lens of the essential learning they make possible.

Appendix B ISTE National Educational Technology Standards for Students
The new NETS express what students should know and be able to do to learn effectively and live productively in an increasingly digital world.

Appendix C Reading Group Guide
Chapter-by-chapter questions are provided to prompt discussions and encourage reflection about your own practice.

Appendix D Bibliography

Your Turn

Where Are You Starting?

Where are you starting your journey? Why? Think about your own previous experiences with project-based learning. If you have already used the project approach with students, what did you like or dislike? What would you like to learn to do better in the future? Do you have regular opportunities to collaborate with colleagues? Where do you turn first to sound out new ideas for your classroom?

If you already have a blog where you reflect on your teaching practice, use it to capture these thoughts. If you don't, consider setting up a blog now. A blog offers you an ideal space to track your reflections over time. And, as you will see in the chapters ahead, becoming an edublogger will connect you with an online community of educators who share your interests.

Do you need help setting up a blog? Chances are, an experienced blogger is within reach. Consider asking your school or district technology coordinator or media specialist for help. Find out if any of your fellow teachers (or students) are blogging. (For more discussion about blogs, see appendix A: Essential Learning with Digital Tools, the Internet, and Web 2.0.)
CHAPTER 1

Mapping the Journey—Seeing the Big Picture

Scott Durham, a young teacher, was hired to join the faculty at the same Michigan school where he had once been a student. Before the new year began, Durham took a stroll down the halls. He indulged in a little nostalgia as he wandered past his old classrooms. Then he asked himself a critical question: “What had I actually done in those rooms?” He could remember getting good grades on tests and assignments, but he couldn’t come up with a single memory about a project that had made him excited about learning. On the spot, he promised himself—and his future students—that he would pursue “teaching in a different way.”

Project-based learning—powered by contemporary technologies—is a strategy certain to turn traditional classrooms upside down. When students learn by engaging in real-world projects, nearly every aspect of their experience changes. The teacher’s role shifts. He or she is no longer the content expert, doling out information in bite-sized pieces. Student behavior also changes. Instead of following the teacher’s lead, learners pursue their own questions to create their own meaning. Even the boundaries of the classroom change. Teachers still design the project as the framework for learning, but students may wind up using technology to access and analyze information from all corners of the globe. Connections among learners and experts can happen in real time. That means new kinds of learning communities can come together to discuss, debate, and exchange ideas.

The phrase “21st-century learning” slipped into use long before the calendar rolled over to 2000. A robust debate about the needs of digital-age learners and the workforce needs of the new century continues to engage a global audience. The business world demands employees who know how to work as a team, access and analyze information, and think creatively to solve problems. In the academic world and the blogosphere, educators routinely call for new strategies to better connect with the plugged-in generation known as the Millennials. But with the new century now well underway, the shift in teaching necessary to realize this vision is far from complete.
You may already be familiar with traditional project-based learning, which has been shown to be effective in increasing student motivation and improving students’ problem-solving and higher-order thinking skills (Stites, 1998). In project-based learning, students investigate open-ended questions and apply their knowledge to produce authentic products. Projects typically allow for student choice, setting the stage for active learning and teamwork.

Reinventing the project approach doesn’t mean discarding this venerable model. Rather, we advocate building on what we already know is good about project-based learning. By maximizing the use of digital tools to reach essential learning goals, teachers can overcome the boundaries and limitations of the traditional classroom. Some tools open new windows onto student thinking, setting the stage for more productive classroom conversations. Others facilitate the process of drafting and refining, removing obstacles to improvement. Still others allow for instant global connections, redefining the meaning of a learning community. When teachers thoughtfully integrate these tools, the result is like a “turbo boost” that can take project-based learning into a new orbit.

What are the hallmarks of this reinvigorated approach to projects?

• Projects form the centerpiece of the curriculum—they are not an add-on or extra at the end of a “real” unit.
• Students engage in real-world activities and practice the strategies of authentic disciplines.
• Students work collaboratively to solve problems that matter to them.
• Technology is integrated as a tool for discovery, collaboration, and communication, taking learners places they couldn’t otherwise go and helping teachers achieve essential learning goals in new ways.
• Increasingly, teachers collaborate to design and implement projects that cross geographic boundaries or even jump time zones.

When these components come together in a successful project, the result is transformative, for both teachers and learners. The young teacher described earlier in this chapter developed an alternative to the textbook-driven approach to teaching history. He teamed up with the media specialist at his school to design a project in which students use online collections from the U.S. Library of Congress to investigate primary source materials. His students now make their own sense of history by analyzing the events and artifacts of the past—just as “real” historians do. It took Durham some time to develop his new instructional strategies, because students had to learn new skills, such as understanding text written in antiquated language. He had to hone his own collaboration skills to effec-
tively plan a project with the media specialist. But the payoff on his investment has been huge. He compares the experience to a weight having been lifted off him. “I’ve gained such freedom as a teacher knowing that my students are now free to find meaning for themselves,” he says.

Individual teachers are not alone in discovering these benefits. Gradually, projects are beginning to take hold across schools, and even across systems, as drivers of school improvement. At New Technology High School in California, the project approach is the cornerstone of instruction for the entire school and has spread to a growing network of schools across the U.S. (See Spotlight: The New Technology Model, page 15.) In Singapore, project-based learning is a national goal. The Ministry of Education in Singapore encourages teachers to adopt the project approach with the motto: “Teach Less, Learn More.” In Scotland, teachers are forming a professional community around the idea of Extreme Learning, in which teaching and learning are seen as participatory, collaborative, and creative.

When teachers facilitate well-designed projects that use digital tools, they do much more than create memorable learning experiences. They prepare students to thrive in a world that’s certain to continue changing.

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**Side Trip**

**Tour the Blogosphere**

The growing online community of edubloggers generates lively conversations about the direction education is heading. Listen in, or join the discussions, at the following blogs:

- **2¢ Worth**—David Warlick is a veteran teacher, provocative author, and technology advocate. http://davidwarlick.com/2cents

- **Cool Cat Teacher**—“Teacherpreneur” Vicki Davis blogs about innovations in learning, including her own collaborative, global, online projects. http://coolcatteacher.blogspot.com

- **EduBlog Insights**—Anne Davis from Georgia State University is an elementary educator and instructional technology advocate who has pioneered the use of blogs with young writers. http://anne.teachesme.com
TEACHERS ARE LEARNERS, TOO

Traditional project-based learning is still a relatively new idea for most teachers. It’s not the kind of instruction most of us ever had a chance to experience as students. Bringing digital-age technologies into the picture makes it even less familiar. For teachers who have never observed technology-rich, project-based learning in action, it may be hard to even imagine what a 21st-century project looks like.

Fortunately, as lifelong learners, we all have experiences by which we discover new information and learn to use new tools to achieve our goals. In our daily lives, we tackle all sorts of projects—from building a garden shed to planning a vacation to hosting a dinner party. The learning curve can feel steep the first time around, especially if we have to master a new tool or technology to get the job done. We may run into challenges, discover
we need to conduct more research, or seek out expert advice. Then there’s that feeling of satisfaction—even celebration—when we reach the goal.

Isn’t that the kind of memorable learning experience you want for your students, too?

“The only thing I can remember from my high school biology class is cutting open a frog,” says Michael McDowell, a New Technology High teacher who now uses the project approach as the foundation of his curriculum. He sees projects as the best way to help his students master the big ideas of biology. But it’s just as important to him that his students gain experience and learn broader skills. “Years from now, I want my current students to remember that my classroom is where they not only learned about biology, but where they also learned how to work as a team how to solve a problem, how to deal with change,” he says. “And if they happen to forget the precise definition of mitosis, I want them to be able to know how to find the answer again if they need it.”

The New Technology Model

During his first seven years of teaching, Paul Curtis tried valiantly to make project-based learning work in a traditional high school environment. He was convinced that real-world learning offered benefits that textbook-based instruction couldn’t match. But despite his enthusiasm, he hit one obstacle after another. “Unless the whole school is convinced this is the way to go, you’re fighting this huge uphill battle,” he says. “No one else has the students working together in teams. No one else asks students to make presentations or assesses them the way you do. Your class is significantly more rigorous and more challenging, even though you may assign less homework.”

Eventually, Curtis left to join the staff of New Technology High, a school designed from the ground up to meet the needs of 21st-century learners. As a farewell gift, Curtis’s former colleagues gave him the Don Quixote Award—a recognition of his pursuit of windmills. But for Curtis, the move to New Technology High felt like a homecoming: “I found myself in a place where project-based learning drives the entire curriculum model.”
At New Tech, project-based learning is indeed the centerpiece of instructional design. The entire culture of the school supports this approach. Technology is pervasive. Textbooks are scarce. Students have computers within reach at any time, from every classroom. Their “project briefcases” are stored on a server, which they can access from any computer connected to the Web—at home, at school, anywhere, anytime. Collaboration is a given for both students and teachers.

**FACING THE FUTURE**

New Technology High was founded in Napa, California, in 1996, after local business leaders expressed concern about meeting the workforce needs of the 21st century. They challenged the school district to find a better way of preparing students for the future by having them learn to think critically, collaborate as part of a team, and use technology as a tool for solving problems. In turn, the business community pledged financial support to invest in a cutting-edge infrastructure for learning.

The New Tech model emerged from four years of research and planning. Designers of this forward-thinking school looked widely for promising practices. They surveyed the literature about high school reform. They consulted with experts on professional development and school change. “Everything we do is based on research,” explains Monica Tipton, principal of New Tech High since 2006. “We encourage teachers to experiment and innovate, but nothing is frivolous in terms of the research base behind it.”

**A DESIGN FOR CHANGE**

What are the hallmarks of the New Tech model?

- It’s small by design, with no more than 100 students per grade in a remodeled building that once housed an elementary school. A maximum student body of 400 allows for greater personalization. Admission is by lottery. In a setting where staff and students get to know one another well, less time gets spent on student management issues. That leaves more time for learning.
• Projects that immerse students in real-world learning are the centerpiece of instruction.

• Technology is everywhere, but it’s not the main focus. In this environment, there is always a computer accessible to every student, but technology is consistently viewed as a tool rather than as the focus of learning. “Once you get the hang of it,” says a 10th-grader about the many online applications, “you just glide along.” Web-based tools allow for collaboration on many levels—between student and teacher, among teachers, and between students and experts outside the school. Students create digital portfolios that encourage them to reflect on their learning over time.

• Teachers are given time and incentives to work together, including shared planning time and staff meetings that focus squarely on instruction. A critical friends approach fosters a culture of collaboration. As Tipton (2006) explains, “Before a teacher introduces a new project to her students, she can ask her peers, ‘OK, here’s my plan. Now, where are the holes?’”

• Online assessment tools enable teachers to provide students with feedback that goes far beyond a single grade. A student is likely to receive multiple grades on one project, better focusing his or her attention on areas for improvement.

• Good ideas are shared. Designing a new project requires hours of planning on the front end. By developing an online project library, teachers have a place to share completed projects and search for ideas they want to adapt for their own classrooms.

**REPLICATION UNDERWAY**

Through the New Technology Foundation, established in 2000, key elements of this model are now being replicated across the United States. Support from the Bill & Melinda Gates Foundation has contributed to the expansion. By 2006, the number of sites in the New Tech network had grown to 24. Settings range from urban areas to rural communities, from stand-alone institutions to small schools within larger high schools. Meanwhile, hundreds of visitors from around the world come each year to observe the New Tech model in action.
GETTING READY

What will help you make the transition to using the redefined project approach with your students? How can you assess your own readiness for making this shift?

As a first step, you need to get comfortable in the learner role as you start mapping your own journey toward project-based, technology-rich learning. You may find yourself rethinking many aspects of how you teach, including how you have employed projects in the past. You won’t know all the answers in the beginning. You may encounter questions that take you in unexpected directions and open more opportunities for your own learning.

It’s no accident that getting comfortable with change is a theme that recurs throughout this book. Being able to adapt to change is essential for your students’ future success. It’s just as important for your own professional growth.

In the chapters ahead, you will get help with every aspect of designing, implementing, and assessing projects that meet the complex needs of digital-age learners. You will learn to use the newly updated National Educational Technology Standards for Students (NET•S) to plan projects that cultivate important 21st-century skills such as creativity, information fluency, critical thinking, and digital citizenship.

But for now, let’s consider the big picture of teaching with authentic projects. Where are you apt to notice change? What do you need to be ready to think about? Using the project approach will prompt you to reconsider:

- your learning goals. Be ready to rethink your expectations for what students will know and do.
• the way you talk and engage with students. Be ready to step off the stage and interact with your students differently.

• your classroom management style. Be ready to help students become better at managing their own progress.

• the physical arrangement of your class. Be ready to reconfigure the hardware—desks, computers, and other furnishings—to facilitate teamwork and collaboration.

• how you think about assessment. Be ready to reevaluate what you need to pay attention to throughout the learning process.

• what you collect. Be ready to reconsider which artifacts of learning are worth keeping.

• how you communicate with parents and colleagues. Be ready to explain your reasoning for taking the 21st-century project approach.

So much changes with this approach that you may be wondering, is it worth all the trouble? Your colleagues, principal, students, or parents may ask you the same question.

For example, a teacher from the Philippines imagined how a collaborative, online project would increase her students’ literacy skills. By connecting them with fellow learners at a distant school, she envisioned greater student engagement and motivation to write well. However, she had to overcome parents’ reservations about technology to get the project off the ground. Many parents equated computer use with games and video arcades, which they saw as distractions. As the teacher, Cecilia Mag-isa Estoque, explained to a reporter, “I needed to prove to the community that technology had a good and educational side, especially when properly tapped and utilized.” (“Teacher Uses,” 2006)

As you design and introduce successful projects and see your students engage more deeply in meaningful learning, you will discover your own good reasons to continue on this journey. You may find that projects help your students get at ideas and make connections they would not otherwise see.

Julie Lindsay has been using the project approach for a decade while teaching at international high schools around the globe. During the 2006–07 school year, she was teaching at International School Dhaka, Bangladesh, when she collaborated with Vicki Davis, a teacher from Camilla, Georgia, in the U.S., to create the Flat Classroom Project. Pairs of students from opposite sides of the globe used podcasts and wiki entries to share their thinking about Thomas Friedman’s provocative book, *The World is Flat*. Even Friedman himself responded, which was one of many surprises the project generated. The Flat Classroom Project (http://flatclassroomproject.wikispaces.com) received the 2006 Edublog Award for Best Wiki.
For Lindsay (2006), projects frequently generate unexpected benefits. She reports, “I never fail to be thrilled at the absolute delight the students get from these projects and how the learning outcomes are usually far higher than initially expected.” She describes the following examples of the “extra learning” that occurs apart from the content of the project:

- Students develop good communication skills to break through cultural misunderstanding and find consensus.
- Students develop good inquiry skills, which foster a sense of wonderment at the differences in the world.
- Students learn to be flexible with their working hours because they know other people are relying on them to meet their deadlines.
- Students develop a fuller understanding of how the world works and that it does not just revolve around them.
- Students achieve the feeling that, through communication with and understanding of other people, individuals can do something about changing the world.

YOUR INVESTMENT

If you are a newcomer to the project approach, it may take some time before you see similar results. In the beginning, keep in mind that you are investing. Project design is front-loaded work. This means the teacher invests in preparation and planning to set the stage for a project. After that, you shift control to students. Then, it’s their turn to invest effort in the learning experience, and you become more of a facilitator and guide, as well as a sounding board for their questions. Your initial investment in project design begins to pay off right away, as soon as you set the stage for student-driven learning.

You can also expect the effort you are putting in now to result in efficiencies in the future. If you create a successful project, chances are you will use it again and again. It’s a cumulative process: what you learn from each project informs the next one. Creating new projects is like building your classroom library. It’s a resource that gets better and better over time.

For example, four teachers on a grade-level elementary team regularly work together to plan interdisciplinary projects that address multiple content standards while also connecting students to the larger world. A perennial favorite is a project about international trade. Fourth-graders become “import detectives” to figure out where in the world famil-
iar objects come from. They use Web resources to track shipments in real time and trade information and artifacts with students in other countries. The teachers’ initial investment in planning has paid off with a reliable platform on which they can build new ideas. The project has evolved over the years as teachers have found new ways—and new technologies—to take student investigations deeper. For example, when Google Earth made satellite imagery freely accessible, it gave their students a new way to “see” international trade patterns.

With practice, engaging in project work helps teachers and students develop new ways of working together and incorporating new ideas. Over time, your students will get better at working as a team, managing deadlines, resolving conflicts, and investigating their own questions. You will become better at facilitating their success. You will all get into a rhythm of working together well.

Finally, remember that you are creating new traditions for your students. Years from now, what do you hope they will remember about the learning experiences they shared with you?

WHAT’S NEXT?

Now that you have established your readiness for this reinvented project approach, it’s time to think about who will be taking this journey with you. The next chapter focuses on working with colleagues and harnessing the benefits of professional learning communities.

Social Bookmarking

As you roam the Web in search of good ideas, manage what you find with the help of a bookmark management tool. And, surprise! You will meet others out there who are paying attention to the same ideas as you. Furl and del.icio.us are easy bookmarking tools, and for the super-social bookmarks out there, there’s Digg. Bookmarking tools, along with other services (such as Flickr) that
allow tagging, exemplify the “folksonomy” aspect of Web 2.0. “Folksonomy” refers to the social taxonomy or classification system that evolves as users collectively make sense of what they find on the Web. Users associate “tags” or keywords to the content they bookmark, and they can see how others have treated the same material. The easiest way to understand the power of bookmarks and tagging is by using it. Try del.icio.us now and explore the social side of information on the Web.

To use del.icio.us, first create a free account and add the del.icio.us button to your browser menu bar. Then, when you find a link you like, make a digital bookmark for it by clicking the “tag” button in your browser menu bar. This will automatically save the bookmarked link to your own “my del.icio.us” page, as shown in Figure 1. You can make notes about the content and categorize links by “tagging” them with a keyword or two. This makes them easy to sort through later, and your notes help you remember why you wanted them (“Refer to in Chapter 1,” you might write). For example, if you find project-based

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**Figure 1** One page of the author’s del.icio.us bookmarks, organized by the shared tag “web2.0”
learning resources you like, you might bookmark and tag them as “PBL.” In your “my del.icio.us” page, you can sort those links tagged “PBL” into a single view (as opposed to the basic view where they are jumbled with your “Italian Cooking,” “Spa Vacation,” and other bookmarks). When others bookmark the same site as you, you will see a note next to the bookmark that says something like, “saved by 185 other people.” When you sort tags, you can see your bookmarks, bookmarks made by others who used the same tag, and the most popular sites bookmarked with that tag. Tags add collective judgment to the process of deciding what’s useful on the Web. If many others bookmark a site, it might be worth your attention. For example, the PBL Checklists site (http://pblchecklist.4teachers.org) was bookmarked by 85 others.

There are other social functions in tools like del.icio.us that you will discover once you start bookmarking. Start by organizing your links, and see where it leads!

del.ici.ous—http://del.icio.us
Furl—www.furl.net
Digg—http://digg.com

Your Turn

Start with the Big Picture

As you begin this learning journey, spend some time thinking about where you are going. Make sure you’re embarking on the right path. Do some research to gather your own evidence about the benefits of digital-age projects. Start by taking a look at these online resources to help you see the big picture of what projects have to offer you and your students:
• Education blogs (see suggestions in Side Trip, page 13). Many edubloggers are on the leading edge of innovative project design. Following their conversations will help you track emerging ideas and practices, and can even provide you with virtual professional development—at no cost.

• Edutopia, the George Lucas Educational Foundation Web site, offers multimedia resources that demonstrate the potential of project-based learning. Go to http://edutopia.org, then click on “Project-Based Learning.” Watch a video, read a research synthesis, or browse the library of project examples. What catches your attention as a strategy that could work well with your students? What seems “too big” or out of reach at the moment?


• National Educational Technology Standards for Students were refreshed by ISTE in 2007. Take a look at the new NETS•S (online at www.iste.org and also in appendix B in this book). We will focus on the new NETS•S in more detail in chapter 3. For now, ask yourself: How do these new standards reflect your students and the increasingly digital world in which they are living and learning?

Part of information literacy is knowing how to analyze and evaluate resources. Once you have found something you consider useful, you want to be able to locate it again. You also want to be able to share compelling research and good ideas with colleagues. Technology can help you with these activities. If you don’t already have an online place to organize and annotate resources and other useful links, now’s the time to set up a social bookmarking account. You will continue to use it throughout your learning journey.
Reinventing Project Based Learning

Your Field Guide to Real-World Projects in the Digital Age

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