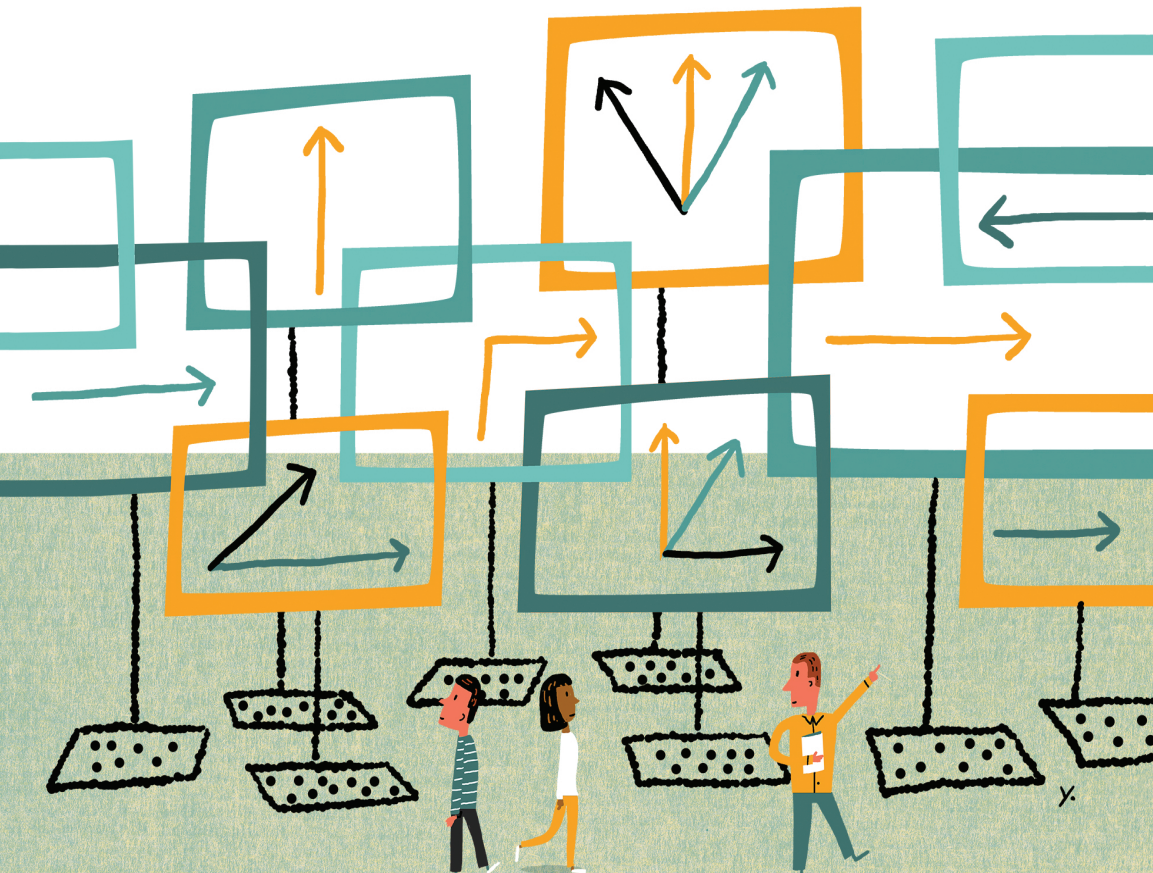


Technology with Intention



Dear Readers,

Much like the diet phenomenon *Eat This, Not That*, this series aims to replace some existing practices with approaches that are more effective—healthier, if you will—for our students. We hope to draw attention to practices that have little support in research or professional wisdom and offer alternatives that have greater support. Each text is collaboratively written by authors representing research and practice. Section 1 offers practitioner perspective(s) on a practice in need of replacing and helps us understand the challenges, temptations, and misunderstandings that have led us to this ineffective approach. Section 2 provides researcher perspective(s) on the lack of research to support the ineffective practice(s), and reviews research supporting better approaches. In Section 3, the author(s) representing practitioner perspective(s) give detailed descriptions of how to implement these better practices. By the end of each book, you will understand both what not to do, and what to do, to improve student learning.

It takes courage to question one's own practice—to shift away from what you may have seen throughout your years in education and toward something new that you may have seen few, if any, colleagues use. We applaud you for demonstrating that courage and wish you the very best in your journey from this to that.

Best wishes,

— *M. Colleen Cruz* and *Nell K. Duke*, *Series Editors*

NOT THIS  **BUT THAT**

Technology with Intention: Designing Meaningful Literacy and Technology Integration

SUZANNE KELLY AND ELIZABETH DOBLER

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Credits continue on page vi

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INTRODUCTION

Nell K. Duke

As educators, I imagine that many of you have been to professional conferences with an exhibit hall: booth after booth of vendors selling programs, books, software, manipulatives, posters, papers and pencils, whiteboards, T-shirts, and on and on. Now imagine yourself at the equivalent exhibit hall for a medical conference. There, too, are books, software, all kinds of equipment—from syringes to massive imaging machines, posters, waiting room furniture, and yes, T-shirts.

When we think of the context of medicine, it is easy to grasp several truisms. First, none of these products can replace physicians. A deeply knowledgeable and skilled human is still necessary to the practice of medicine. Second, many of these products can help physicians do their job better. Physicians with access to a more rapid strep test and a more precise functional magnetic resonance imaging (fMRI) machine are likely to be more efficient and effective in their work. Third, physicians bring their expertise to bear in selecting and deploying these tools. For example, a great surgeon knows that this scalpel works very well cutting through skin in this part of the body but not as well in cutting through skin in this other part of the body; a great primary care physician concludes that this diet management app is likely to work for patients with one kind of health profile but not for patients with a different profile, and so on.

Now let's turn back to education and in particular education technology. Although perhaps less obvious to some, the same three truisms apply:

- Educational technology cannot replace a knowledgeable and skilled teacher.
- Educational technology can help teachers do their job better.

- Skilled teachers bring their expertise to bear in selecting and deploying educational technology.

This book helps us to live out these truisms, particularly with respect to literacy education. The title really nails it—technology *with intention*.

We solicited this book well before the COVID-19 pandemic. Even before the pandemic, conference exhibit halls, our email in boxes, and the web were overflowing with technological tools, some very promising, some decidedly not promising, and all underscoring the need for the expertise of educators to select among and deploy them in the service of children’s learning. As we move toward a post-COVID-19 world, there are even more tools, with more on the way, and still the need for the expertise of educators to select and deploy them in the service of children’s learning. Our goal is for this book to help you further develop and activate that expertise.

When I think about someone who knows research on literacy and technology *and* is able to provide highly practical, actionable advice for teachers, Elizabeth Dobler immediately comes to mind. I have known Beth a long time, and one of the qualities I most admire in her is that she has remained so well grounded in K–12 classroom practice even after many years in higher education. She is up on the latest technology tools and the day-to-day challenges and opportunities that classroom teachers face.

Suzanne Kelly is much newer to me. But *wow*. She has a vast knowledge of educational tech tools, but she does not let those tools distract her from knowing her students and focusing on effective instruction. She enacts daily the truism I offered earlier—“Skilled teachers bring their expertise to bear in selecting and deploying educational technology”—and she takes us along with her in that enactment. I think you’ll find uses of technology she describes to be innovative and yet also reassuring—because they connect to existing understandings about how children learn and how effective teachers teach.

I am grateful to these authors for guiding us through the exhibit hall of today’s technology for literacy, and I am grateful to you for your willingness to walk through that hall with them to provide the best education possible for children.

SECTION 1

NOT  THIS



*Technology Dictating
Literacy Instruction*

ELIZABETH DOBLER AND SUZANNE KELLY

If we were able to travel back in time to study the integration of digital technology into literacy instruction, even just a few years ago, what we would see would vary widely from state to state, school to school, even classroom to classroom. If states, districts, or schools saw value and had the means to use technology as part of literacy instruction, resources were directed toward supporting it. If they lacked the means, or did not prioritize it, technology was largely absent, apart from an occasional computer lab or laptop cart and perhaps one or two finished writing pieces a year that would be typed up and printed out. Technology instruction at the elementary level was seen by many as a local or personal preference, as well as often connected to the economic resources or lack thereof for the schools involved. In many, many places whether a teacher integrated technology into their classroom started not by considering its value, but whether it was even available. If it was available, the thinking then shifted to what it could be used for. There was a fair amount of controversy as to even whether technology was appropriate in the elementary school setting, so one of the questions a teacher would ask before diving into a unit that could involve technology was, *Should I use it?*

During the start of the COVID-19 pandemic, this dynamic suddenly shifted. Many of us found ourselves suddenly required to teach using technology out of pure necessity as entire states quarantined. States, districts, and school communities moved heaven and Earth to make sure as many students as possible had access to digital devices. The question no longer was, *Should I use technology?* or *What can I use this technology for?* but instead *How do I use technology to help meet the needs of the most students right now?* Some students had internet access; some did not. Some students had high-functioning hardware that allowed them to move in and out of various apps and platforms easily;

some did not. Many teachers saw participation in academics decrease as, without strong classroom community and teacher relationships, students had less of a reason to engage with learning.

We know most educators did the best they could with the resources they had at the time. It was an emergency, and triage was the required mode. We saw many teachers grow from novice to adept tech users over a period of weeks and others who found no- to low-tech ways of gathering student work, providing feedback, and maintaining community. We watched teachers conduct video conferences with student readers and writers, and sometimes a car or McDonald's parking lot was that teacher's conferring space because the teacher didn't have reliable internet or a quiet place to work. The open discussion nature of platforms like Zoom led some teachers to surrender the "mic" to students and guest speakers and move toward collaboratively created classroom time. We learned of teachers who became pen pals with their students, sending messages back and forth via text, email, and mailed letters. In rural areas with little internet access, some teachers logged impressive car mileage as they personally delivered learning packets and books to students' homes. Baltimore City Public Schools had their local cable station run teachers' video lessons throughout the day. Other teachers lobbied authors for digital access to texts for their students. So many teachers were able to stay connected to their students and offer engaging academics that helped their students grow even in the worst of times.

Now, with a little time under our belts, we pause to reflect on what can be learned, both by successes and mistakes. What were the challenges with technology and decision-making around technology that got in our way of doing the work students needed most? We want to make sure that the increased familiarity we

Just because so many more teachers now know how to use a variety of tech tools doesn't mean that technology should always be our choice.

have with tech due to COVID-19 is accompanied by true intentionality and strong pedagogy. Just because so many more teachers now know how to use a variety of tech tools doesn't mean that technology should always be our choice. As much now as ever, we need to center our decision-making around research-proven principles and practices. Will using technology

in this instance make student learning more efficient, accessible, or authentic or less so? It can be very hard to make these decisions for our students when so many other people believe they have the right answer and that the answer is some specific piece of technology. Every one of us needs to be aware of the most common existing technology for the grade levels we teach and should be teaching students how to use and evaluate existing technology in appropriate ways. The decision of when and how to use the technology requires the thinking of the user. In other words, the primary question lying before us is, Which tech tools will help us meet the specific educational goals at hand—how do we use tech with intention?

Every one of us needs to be aware of the most common existing technology for the grade levels we teach and should be teaching students how to use and evaluate existing technology in appropriate ways. The decision of when and how to use the technology requires the thinking of the user.

What Technology Is (and Isn't Yet)

Technology is a tool. Any tool requires knowledge on the part of the user. Any tool can be misused. From *Metropolis* to *West-world*, we communicate our chronic anxiety about technology outsmarting and overpowering humanity that surrender might be our best option. When we surrender to technology, we give up the opportunity to weigh options and choose the best course of action ourselves. Without that surrender being a conscious decision, fully informed by the specific context of the technology's use, we become more distant from the real work we should be doing.

Technology can take over some but not all of our decision-making. It can mean that we make some decisions less often than others: having a closetful of the same professional outfit worked for Barack Obama and Steve Jobs because it eliminated the daily decision of what to wear, but neither of them chose that one repeated outfit at random nor did they always wear that outfit regardless of changed circumstances. Steve Jobs didn't wear his black turtleneck in the heat of summer and

For decision-making guidelines on when to use technology, see Section 3, page 53.

Barack Obama doesn't wear his suit on family vacations. The decision-making they gave up was only the part that didn't need to be repeated. Jobs and Obama were avoiding decision fatigue, the unnecessary use of energy making choices that depletes our attention from the most important work we have to do. Because teachers face so much decision fatigue, technology can be an appealing outsourcing of some decision-making. That can be a very smart decision provided (1) the technology is right for our specific students' precise needs, and (2) the technology is giving us space to do higher-level work directly with students. We use an app/program for publishing (PowerPoint, Adobe Voice, Word) or gathering readings (Padlet, Google Docs) because it consolidates our decision-making for a specific purpose (or is more open to allow for multiple purposes). If students can choose the form of publishing, they might start in Word to gather their thinking. If they know they'll need to present the information in a visual format, then a digital slide app such as Google Slides might be the best choice. Yet often the purpose of our teaching doesn't guide our tech choices. It is not unusual to overhear teachers in the staff lounge mentioning the Google Slide project their kids are doing and then hearing the response being something along the lines of, "Oh, we're using Book Creator," with nary a discussion about how those tools will match or strengthen the literacy skills being taught. The focus is often on the tech tool itself, not the literacy skills prioritized. Teachers are inundated by a chorus of expectations: digital literacy, twenty-first century skills, college and career readiness, apps they *have* to know. It can be very difficult to sort out which voices we should listen to. Let's take a moment to name two of the messages teachers hear that argue we should surrender our decisionmaking to technology: "the future of work is technology" and "technology can avoid human error."

"The Future of Work Is Technology"

Education technology is a profitable and growing business. The education technology market for 2019 was \$43 billion, growing from \$39.33 billion in 2018 (Bridge n.d.). Ed tech companies have developed an effective narrative selling schools and districts on

buying technology as the solution to their students' learning needs. The argument: to be competitive in the future professional marketplace, today's students need to be adept with technology. In addition, whole-district purchases of ed tech often originate from a panicked sense of scarcity: our students aren't performing well enough on standardized tests/these skills, and we need to fix this right away! We 100 percent agree that there is an urgency to improving students' learning now. Postponement is not the answer. However, outsourcing solutions to software programs without developing teacher expertise rarely yields more than a slight increase in student performance, as you'll see in Section 2. Additionally, although technology is indeed important, there is a danger in putting more stock in what the sales representative tells us are the skills and knowledge our students need, which just happen to align with what they're selling, as opposed to our trusting knowledge as professional educators.

We 100 percent agree that there is an urgency to improving students' learning now. Postponement is not the answer. However, outsourcing solutions to software programs without developing teacher expertise rarely yields more than a slight increase in student performance.

“Technology Leads to Efficiency”

When technology first entered the classroom, some feared computers would replace teachers. From addressing teacher shortages to saving costs, it is no coincidence that this solution most often occurs or is proposed in financially under-resourced districts. Still, without there being any evidence that tech can entirely replace teachers, people continue to argue for the efficiency of doing so. Of course, human beings will make errors, but, as of right now, they can respond to their own errors in ways that a computer program cannot. Teachers can see that their instruction isn't reaching a student and adapt. Computer programs can identify when but not why a student keeps picking the wrong answer. The program cannot discuss the task, determine the student's emotions and give support so that the student can produce their best work.

Yet, technology does allow for skills practice in a sequential, progressively difficult way. Often this can work when students need repeated and scaffolded practice of a concept, skill, or strategy on

an individualized level. However, outsourcing that decision-making to technology so far has mostly meant that students practice skills in oversimplified, decontextualized tasks that often reveal only whether the student can complete that task, not the larger understanding behind the skill. Right now, much of ed tech software creates artificial contexts for students' learning that don't develop their understanding in meaningful, useful ways.

For the research on effective literacy learning with tech, see Section 2, pages 18–31.

AFTERWORD

M. Colleen Cruz

Back in the last century, when I was a new teacher, I taught in a public school that had a computer lab. It was run by an absolutely brilliant educator, Mary Sue Lindley, who taught computer classes to all students and also supported teachers who were interested in bringing more tech into their teaching. At the time, the bringing of tech into teaching was a very hard sell for a lot of us. Personal computers were still not in every home, even if they were becoming more common. The internet was still accessed with dial-up modems.

One day, while I was hanging out in the computer lab after school, checking my email because I didn't have a computer at home, Mary Sue asked if I would be willing to pilot some technology with my students in writing. She showed me this round, turquoise machine, an Alpha Smart—part word processor, part sort of computer. Although I was a bit leery, I have also always been invigorated by new ideas, and I jumped at the chance to be a pilot teacher. What I did next was embarrassingly *meh*. A few students stumbled through trying to draft using the machines. I stumbled around, trying to figure out how to make the things something more worthwhile than a typewriter. And ultimately the machines ended up being another newfangled thing that did nothing to improve student learning. If anything, those turquoise machines became another obstacle students had to overcome on their way to learning. As my years in the classroom added up, technology vastly changed and improved, but I continued to treat it as something more akin to an add-on or extra, with little instruction in actual ways to merge literacy with technology. I thought very little about

how to authentically integrate technology into my teaching, allowing its capabilities and my attention span to determine how it was utilized.

What I would have given (and my students, quite frankly) for me to have read the book you have just finished! What a difference it would have made to have been introduced to the revolutionary idea that technology is not some magical thing that I have no control of, but rather a tool that can and should be used to meet the needs of both teacher and student.

With constant upgrades, innovations, and new capabilities, the technology coming at teachers (and expected to be instantly integrated into the classroom) has never been more overwhelming. Elizabeth Dobler and Suzanne Kelly have managed to cut through all the noise and focus on what matters most—teaching students, not technology. By naming the technology temptations teachers face (It’s engaging! It’s responsive! It can differentiate automatically!) and how easy it is to get lost in the abundance of options and steadily increasing administrative demands, Beth and Suzanne have put their arms around our shoulders like old friends, encouraging us to put all of that aside. Beth and Suzanne offer us a different path, one where we are the ones in charge of the technology and can use what we know from research and powerful teaching methods to move forward with intention, making technology be our assistant in creating powerfully literate students and citizens.