STUDENTS TAKING
CHARGE

IN GRADES K–5

Inside the Learner-Active, Technology-Infused Classroom

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Introduction

I am pleased to offer this new edition of *Students Taking Charge*, focusing on K–5 classrooms, thus allowing me to provide you with even more examples and strategies. As always, my thinking continues to evolve, so this edition offers new insights into designing student-driven classrooms, building student engagement, empowerment, and efficacy. I am indebted to the many teachers who run *Learner-Active, Technology-Infused Classrooms*, tweet about them, and share their stories with me. Their experiences help educators collectively take school to the next level.

Passion lies at the intersection of a dream and success. Those who are passionate about their craft typically have a dream of what can be, and have had glimpses of that dream in small pockets of success along the way. That combination fuels a desire to keep moving forward, regardless of personal sacrifice, fully believing that this is the road on which they are meant to travel.

The field of education is graced with many passionate teachers—those who believe that all students can learn and are fueled by those moments when students perform beyond their expectations. The Greek philosopher Heraclitus said that you can never step in the same river twice, because the river is constantly changing. So it is with the classroom. Each day brings newness: students are constantly changing, growing, and learning; passionate teachers are continually honing their craft; society possesses a momentum that repeatedly presents new challenges for schools.

Passionate teachers see beyond the barriers; they know there is a better way to prepare young people for their future and to unleash in them all the potential they possess. They explore new ways of approaching teaching and learning, and, fueled by isolated and sometimes small encounters with success, they forge ahead. I have no doubt that the relentless pursuit of instructional innovation by the passionate few will overcome the barriers of resistance and create innovative, adaptive learning environments that will both serve and form society in ways beyond our current imagination.

My own passion for changing the world through education is fueled by the *Learner-Active, Technology-Infused Classroom* students who thank me and share their stories; their dedicated teachers who challenge themselves daily and work tirelessly to make their students' educational experiences more productive and meaningful; and their school and district leaders who courageously find ways to make it happen, battle the status quo, and take the risk to forge a new and innovative path for school. I am blessed to be joined by the amazing group of educators at IDE Corp. Their passion and dedication to the educators and students we serve is inspiring; they challenge my thinking and enhance the collective work we do.

My Journey

My vision for the *Learner-Active, Technology-Infused Classroom* was inspired by many moments throughout my life. When I was ten, I began running a summer school program for the neighborhood children; by the time I was twelve, I was charging fees and holding graduation ceremonies for parents. In some ways, it was a one-room schoolhouse; I had neighborhood children of all ages anxious to come to my school for the three days a week it was open, including those who were gifted, those with learning difficulties, and a teenager with cerebral palsy. To meet their needs, I assigned varying work and spent a lot of my time working in small groups and with individual students. I still look back in amazement that the neighborhood kids hated to miss a day of summer school, given that we truly worked the entire time! One bright and talented young man had been attending my school since age three. When his mom had her first parent–teacher conference, his teacher pointed out how far ahead of his peers he was, no doubt because of the private school he was attending. Today, the young man is a judge, and I like to think his early experiences in "school" helped to fuel his own passion for his craft.

An early experience in my teaching career inspired me to solidify my vision and articulate it so that others could join my quest for the ultimate learning environment. It was the late 1970s, my second year in teaching and first year teaching middle school. I was assigned the lower-level math students who had repeatedly failed the state tests. I remember starting class asking my eighth graders to take out their books, only to find that few had brought them. Paper? Pencil? My efforts to recreate the traditions experienced in my own schooling seemed futile. One day, I asked my students to simply show up for class the next day—no books, no paper, no pencils. They all complied. I had pushed back the desks and arranged the chairs in a circle. I explained that I wanted to keep my job and they needed to learn math, and I asked them for the solution to my dilemma. My students pointed out that math instruction was boring and they didn't see the point.

I suggested that perhaps I could design projects that would make the learning more meaningful; they agreed to give it a try.

I don't remember the first project I designed, nor the entire complement, but I do recall a few. We created scale drawings of birdhouses to build; we used paper plates to create polyhedral disco balls (it was, after all, the 1970s, and John Travolta's nephews were in my classes). In those days, teachers could take their students out to play kickball on a nice day. My students would head out with clipboards to track the progress of the game; once inside, they would run the statistics on the game and analyze it in light of previous games. When the state tests arrived, my students did quite well, with almost all of them passing. I remember my principal asking me what I did; I didn't know. He persisted and pointed out that my students performed particularly well on percentages, but I simply shrugged my shoulders and admitted I hadn't gotten to that chapter yet.

Years later, I realized what had happened. I had designed higher-order problems for my students to solve and then provided them with the resources and support they needed to learn. I realized, too, that the problems did not encompass only the skills in a single chapter of the textbook; they spanned many chapters. I would venture to say we worked with percentages, for example, in most of the problems. I saw the power of students learning from a *felt need* in an authentic context, and that year and the successes my teaching style yielded never left me. The personal computer had not even been invented yet.

It was the invention of the desktop computer and its arrival in schools that further fueled my vision for the classroom. Teachers are faced with a classroom of students with varying needs and interests; computers provide them with a wealth of opportunities to help students learn. In the early 1980s, I was a district-level administrator when I decided to make "an offer to innovate" to a couple of teachers. Alysse Daches and Cyndie Bach taught fourth and fifth grade, respectively. They were both among the daring few who purchased desktop computers for their homes. I asked how they would like to have five desktop computers for their classrooms, and they jumped at the chance. Over the course of the next few months, I saw a new vision for the classroom spring to life. On one visit, they told me they felt guilty that the computers sat vacant while they were teaching lessons; I suggested that perhaps they could reduce the number of whole-class lessons in favor of other means of providing instruction. On another visit they told me how challenging it was for the children to push together desks of all different sizes and attempt to work collaboratively. I replaced the desks with forty-two-inch round tables. Structure by structure, strategy by strategy, my vision for instruction took shape. More than twenty years later, with myriad classroom teachers implementing the *Learner-Active, Technology-Infused Classroom* across the grade levels, I wrote the first edition of this book to capture the

essence of this instructional framework to share with passionate teachers everywhere. This second edition is split into two books to offer a more detailed look into K–5 implementation and 6–12 implementation, allowing me to provide even more detail and examples for you to understand the framework and implementation strategies.

Your Journey

This book is intended to be a three-fold guide to:

♦ Designing an *Authentic Learning Unit*, which is the foundation of the *Learner-Active, Technology-Infused Classroom*, aimed at engaging students;

♦ Understanding the structures needed to support its implementation and empower students;

♦ Building the facilitation strategies that will move students from engagement to empowerment to efficacy.

Therefore, it's best if you pause after each chapter and spend some time designing the various components of the unit. Every six months, reread the book and you'll learn even more! The early chapters delve into designing an appropriate core problem for students to solve and the analytic rubric to provide them with clearly articulated expectations. Chapter 4 addresses differentiation techniques to further engage students in grappling with content. Chapter 5 focuses on the many structures of the *Learner-Active, Technology-Infused Classroom* that empower students to take charge of their own learning. Chapter 6 drives home the importance of teacher facilitation— a new role for teachers—in this environment. Chapter 7 addresses physical classroom design, which will prove to be more useful for those who have more control over their physical classroom space than for those who do not. The ten principles of the *Learner-Active, Technology-Infused Classroom* are woven throughout and then addressed more fully in Chapter 8. Chapter 9 closes the book with special considerations, such as a priming plan and designing a *Learner-Active, Technology-Infused School*; it also offers thoughts on how the *Learner-Active, Technology-Infused Classroom* addresses many of the instructional needs and programs present in schools today.

I hope this book helps to fuel your passion and provide you with many ideas for innovatively designing your classroom.

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The Why for Your Instructional Design Journey

Change the World!

"Since we've been doing so many real-world problems, I feel like even though I'm in fourth grade I can change the world." This student's words sum up the "why?" of the *Learner-Active, Technology-Infused Classroom*: positioning students to change the world. Students deserve an education that positions them to tackle any challenge, pursue any goal, and be outfitted with the skills to meet with success. Before schools can consider what that should look like, they need to identify the why, their purpose. Why should we put all this energy, thought, money, and time into teaching children? My answer to that question is: efficacy!

Efficacious people can identify a goal, build a plan, and put it in motion; and if they don't achieve that goal, they can reflect on why and make adjustments for the next attempt. Efficacious people are driven by their passion to make a difference in their own lives and the lives of others; they make life happen rather than letting life just happen to them. Efficacious people can take steps to lead a happy life, be a productive citizen, and, moving beyond themselves, change the world! What would it take to create classrooms and schools that produce efficacious human beings and world citizens?

Imagine a learning environment in which students pose questions and actively seek answers, pursuing solutions to problems they want to solve. They decide how they will use their time, take charge of setting and achieving goals, and work individually to build skills and collaboratively develop solutions to real-world problems. Technology is used throughout the day, seamlessly, as students and teachers need it—from handheld devices to

tablets to laptops to virtual-reality headsets. Students walk to a flat-screen monitor on the wall and talk to students in another part of the world. Teachers move around the room, sitting with students, who share their accomplishments, asking probing questions and gathering assessment data that will shape tomorrow's instructional plans. You hear students talking about content; their vocabulary is sophisticated for their grade level; their thinking processes are evident through their discussions and reflections. They are intent on the task at hand, yet not everyone is working on the same thing at the same time. No one is off task. Every now and then you hear a cheer or a student exclaim, "I got it!" as they excitedly dive into the next phase of a project. Students shift from current activities to others without the prompting of the teacher. No one watches the clock; no one wants to leave. This is a snapshot of the *Learner-Active, Technology-Infused Classroom*. Students in this classroom take learning seriously and pursue it vigorously. Teachers in this classroom masterfully craft and co-create learning experiences with their students that emanate from real-world situations; they facilitate learning, ensuring that each student achieves at the highest level. Parents are partners in the learning process, often via the Internet, working with teachers and students as one cohesive unit to ensure that the students are given the best foundation possible for the rest of their lives.

You may recognize aspects of your own classroom or those of your colleagues. Pockets of innovation exist in schools; it's time to stop celebrating pockets of change, incremental improvements, and isolated innovative teachers. It's time to take bold steps to secure the future of our students and the world.

School and Society

Schools both serve and form society. They serve society by building in their students the skills, concepts, and information needed to thrive in today's world. When the sundial gave way to the analog clock, people needed new skills. When the slide rule gave way to the calculator, school curriculum changed. The school community must continually consider changes in society, particularly technological changes, scientific breakthroughs, and historical events, and ensure that the curriculum is designed to shape successful world citizens.

In addition to critical subject-area content mastery, students need to build skills in creativity, innovation, critical thinking, problem solving, communication, collaboration, information literacy, technological literacy, initiative, self-direction, socializing, cross-cultural engagement, productivity, leadership, flexibility, adaptability, accountability, and responsibility. How do you build "ility"? Most of these skills cannot be approached as a subject. A student cannot take a class in flexibility and adaptability. These skills that

fall outside of subject-area content are acquired based on *how* teachers teach more than *what* they teach.

If schools serve society by *what* they teach, then they form society by *how* they teach. Schools that place a great emphasis on individual competition develop citizens who are well suited for that but may not be as able or willing to work collaboratively. Schools that place a great emphasis on project management, time management, and resourcefulness develop citizens who are better prepared to lead self-reliant, productive lives. This is a connection that schools often fail to realize, and it is why teachers and administrators must very carefully develop an ongoing, purposeful, instructional design plan that not only considers the written curriculum—the what—but also shapes the teaching and learning process in the classroom—the how. Both should connect to a powerful purpose, in the case of this book, positioning students to change the world.

In today's society, an event in one part of the world affects others around the world. Countries around the world comprise a global, interdependent system. Our economies, commerce, health, environment, and more are interconnected, which presents both opportunities and challenges. Beyond the realm of Earth, countries are engaged in a new space race to colonize Mars.

> In order for schools to meet the needs of a global society, they must prepare students to be problem-finders, innovators, and entrepreneurs. . . . Today's students are ready to make the leap from passive recipients of information to active participants in a classroom that will prepare them for their future.
>
> (Sulla, 2015, p. 5)

Moving Beyond "It's Always Been That Way"

Consider this anecdote I once heard. A mother is cooking a ham dinner. She cuts off the end of the ham, places the larger piece in the pan, and begins to roast it. Her young daughter says, "Mommy, why do you cut off the end of the ham?" Mom responds, "You know, I'm not sure, but my mother always did that. Go ask Grandma." The young girl goes into the living room and asks her grandmother the same question. The response is, "I don't know; my mom did that so I did too," and the girl turned to her great-grandmother and asked why. The elderly woman responded, "Well, otherwise it wouldn't fit in my roasting pan!"

What a wonderful anecdote for the ills of perpetuating the dominant paradigm of schooling. Teachers always stood in the front of the room when I was in school, so that must be where you stand. We always had textbooks,

so they must be a necessary part of school. We've always had students write and solve problems on the board, so that must be a necessary component of mathematics instruction. It's time to think through what schooling looks like and make some significant adjustments to past practices. That's not to say you discard everything you currently do. Rather, you keep what works and make some adjustments. The important thing is to keep your mind continually open to change and be willing to shift some of your beliefs as to what the teaching and learning process could look like.

Shifting your belief system is not an easy process; it requires unlearning some of what you've learned in the past. Authors Ron Heifetz and Marty Linksy (2002) distinguished between technical and adaptive change. Technical change focuses on implementing known solutions to problems. For example, if students are not performing up to your desired level, use a rubric to offer them clearly articulated expectations. You learn how to use a rubric, implement its use, and teach others. That's technical change, and it is the focus of most professional development and college courses today in the field of education. It is a transaction of knowledge. Adaptive change, on the other hand, focuses on developing solutions to problems for which none yet exists. It represents an underlying transformation of thought and action. Designing classrooms to meet a new, emerging generation of learners is a problem for which there can be no available solution, given that students and society are continually changing. Adaptive change requires a change in one's belief system.

From a Compliance Model to an Efficacy Model

When you walk into a *Learner-Active, Technology-Infused Classroom*, you immediately notice how engaged students are. You look around the room and note that all students are on task and look very focused on whatever they are doing. Conventional classrooms are based on a compliance model of education: the teacher has rules, goals, and assignments and wants students to comply with those. The understanding is that through compliance, by following the teacher's lead, students will learn; and while that approach might produce temporary test score results, it will, in and of itself, fall short of producing long-term retention of learning and will do little to produce efficacious learners. Thus, a different model of education is needed to produce efficacious citizens who can change the world.

The first step toward an efficacy model is positioning students to engage with content at deep levels. This is one of the key goals for instructional design, as you'll read about in the next section. As students build the ability to engage in activities and with content, they will be better positioned to be empowered to take charge of their own learning. In the *Learner-Active, Technology-Infused Classroom*, many structures and strategies are put in place

to empower students. With engagement and empowerment as the foundation, shifting focus from being empowered by others to empowering yourself leads to efficacy. The *Learner-Active, Technology-Infused Classroom* is an efficacy model of education.

Achieving Instructional Equity

A wonderfully diverse world means diverse learners with diverse needs. The equity discussion has schools challenged to provide not an equal but an equitable education for all by giving each student what he or she needs to succeed. At the core of equity is opportunity and access. Imagine classrooms in which students have myriad opportunities to thrive academically and access to the instructional approach they need and desire.

In his book, *For White Folks Who Teach in the Hood . . . And the Rest of Y'All Too*, Christopher Emdin (2016) defines reality pedagogy as:

> An approach to teaching and learning that has a primary goal of meeting each student on his or her own cultural and emotional turf. It focuses on making the local experiences of the student visible and creating contexts where there is a role reversal of sorts that positions the student as the expert in his or her own teaching and learning, and the teacher as the learner. It posits that while the teacher is the person charged with delivering the content, the student is the person who shapes how best to teach that content. Together, the teacher and students co-construct the classroom space.
>
> (p. 27)

In the *Learner-Active, Technology-Infused Classroom*, student voice and choice are at the forefront. Students work with teachers to identify problems they wish to solve and ways in which to learn what they need to achieve their goals. Teachers facilitate through small-group and one-on-one conversations with students to gain a better understanding of students' abilities, successes, challenges, and needs so they can be a powerful resource in their students' learning journey. It is a classroom in which all students thrive. The *Learner-Active, Technology-Infused Classroom* is an instructional equity model for education.

Three Critical Goals for Instructional Design

At the core of the *Learner-Active Technology-Infused Classroom* lie three critical goals for instructional design: engage students in learning, build greater responsibility for student learning, and ensure academic rigor.

Engaged Learners

Busy students are not necessarily engaged students, nor are seemingly happy students who are working in groups. Although "hands-on" activities are wonderful, what you truly want are "minds-on" activities. If you assume students are engaged in learning, take a closer look to see if what they are doing is directly related to academically rigorous content and if they are understanding and thinking deeply about that content. Suppose third-grade students are learning about the food chain. Consider the following scenarios as we peek into three classrooms:

♦ Students are locating information on the food chain from books and the Internet and creating charts to illustrate the food chains of various animals.

♦ Students are designing a computer presentation on the food chain and are working on adding sounds and transitions to make it more exciting.

♦ A group of students is developing a "what if" presentation, as they were interested in determining what would happen if a member of the food chain were to become extinct, under what conditions that might happen, how that would affect the rest of the food chain, and is there anything we can and should do about it?

Although all three scenarios cover the content of the food chain, it is important to consider how students spend the bulk of their time. In the first scenario, students are most likely engaged in finding and reporting information. Doing so will lead them to some level of knowledge of the food chain, but the work is primarily "regurgitation" of content: copying and pasting, taking data in one form and presenting it in another. This is a prevalent activity in the compliance model of education. The second scenario assumes students have already found their information and are reporting it using a digital presentation, sharing "known" information with others. Their engagement, however, is now in the digital presentation software. Again, although the students are focusing on important skills, as the teacher, you must consider what content is the *goal* of instruction. In this case, students are engaged in the use of software, not understanding the food chain. The third scenario has students "grappling" (Sulla, 2015) with the content itself—understanding the cause-and-effect relationships that exist and using higher-order thinking to consider future situations; they are identifying problems and posing solutions for them based on personal interest and curiosity. All three of these scenarios might occur when learning about the food chain; the key is the *amount* of time allocated to each and which is the

end goal. In the case of the third scenario, students will absolutely have to search for "known" information, and they will have to develop a mode of presentation. That presentation, however, will focus on convincing others of the merit of their solution to the problem, the "unknown" that students have created as the goal of the unit of study.

Current standards demand a higher level of understanding and application of content than ever before.

> The word "understand" means to know how something works and to grasp the meaning of it. The definition intimates personal, often long-term, experience with the subject. . . . Achieving understanding involves deconstructing information, making connections to existing knowledge, making and testing predictions, and constructing new meaning—in short, grappling.
>
> (Sulla, 2015, p. 30)

The bulk of students' time should be spent on grappling with "known" content to provide an "unknown" solution to a problem. Engaged learners need to be grappling with curricular content in significant ways much of the time, no matter what their ages.

Student Responsibility for Learning

Student responsibility for learning is a concept that most educators embrace but few foster. Teachers are often frustrated that students don't come to class prepared, haven't done their homework, and so forth. If you take a closer look at most classrooms, students enter the room and wait for the teacher to tell them what to do; or they follow a "do now" written on the board, that the teacher created. You'll hear teachers saying phrases like, "clear your desks," "take out a pen and paper," "line up at the door," "quiet down," "speak up," and more. Teachers will call on students to speak; distribute materials; give, collect, grade, and return assignments; and tell students what their grades are. In this type of environment, students are asked to follow along compliantly; the teacher decides what, when, and how students are learning. This model typically does not actually produce learning; it might produce a short-term bump in test scores relying on short-term memory, but the goal of schooling must be long-term retention of learning. Many of us who succeeded in spite of the compliance model of education had other things going for us: parents who served as models and mentors, a national respect for education as the way out of poverty post–World War II, the ability to construct meaning from information, and so forth.

Imagine a classroom in which fourth-grade students walk through the door; pick up a folder or log onto a website, that includes their current work and a schedule that they developed the prior day; read through

comments from the teacher; and start working on activities they decided upon. Students determine what resources they'll need to accomplish their tasks, and they sign-up for them, including *small-group mini-lessons* offered by the teacher. They use *analytic rubrics* to guide their work and assess their own progress; they share with the teacher how they're progressing and what they need to be more successful. The teacher facilitates learning through a carefully structured environment that allows students to take responsibility for the classroom. Student responsibility for learning requires clearly articulated expectations and consequences, structures that students use to meet with success, and guidance and feedback from the teacher.

Imagine a classroom in which kindergarten students walk through the door, move a magnetic nameplate into the "present" area for attendance, pick up a folder, and find a seat to get started working. They look in their folder for a paper with a set of choices that they selected yesterday, cutting out and pasting pictures that represent specific learning activities. They get started on the first activity. Some students get together in pairs for buddy reading; others scan QR codes on the wall to access videos on a tablet PC. Some students move to a math table to work with manipulatives. A student who needs help walks over to the *help board* and moves a picture of himself with his name on it to the *help board* area. Soon, the teacher joins him to help him with his work. About twenty minutes into the day, the teacher calls the students to join her in the carpeted area for the morning meeting.

Academic Rigor

If students are engaged in learning and taking greater responsibility for their own learning, then ensuring academic rigor is easy. The battle cry of most schools is to increase test scores, even if scores are already relatively high; but you can't force students to learn. In 1998, William Glasser determined that students choose to learn based on a sense of belonging, freedom, power, and fun. Sousa (2017) found that for information to move into long-term memory, it must have sense and meaning. Presenting content followed by practice, absent of these conditions, will not necessarily increase understanding and will, most likely, not lead to long-term retention. It may bring about a small, temporary bump in test scores, but weeks later, the students will have little to show for their work and little foundation to build upon the following year, which leaves the next year's teacher reteaching that which was forgotten.

I met with a group of teachers representing second grade through twelfth grade to discuss rethinking instruction. During the discussion, an eleventh-grade teacher commented, "Well not only do I have to concentrate

on history, but I have to teach them how to write. I don't know what your curriculum is in middle school, but many of my eleventh graders can't write in paragraphs!" A middle school language arts teacher quickly defended her curriculum with, "I spend a lot of time on paragraph construction because they come to me with no knowledge; but they leave my classroom with strong writing skills. Our district needs to teach paragraph writing in the elementary grades." A second-grade teacher who happened to have a stack of student stories with her pulled them out and said, "I don't know what you're talking about. My second graders write great paragraphs." We passed around the student writing samples, and the upper-grade teachers were incredulous. The first teacher to speak exclaimed, "If they write this well in second grade, what happens to them between then and high school?!"

Many students can memorize content for the moment; if you engage students' minds in grappling with content through meaningful, authentic problems, they will build knowledge and understanding for the long term.

"if you engage students' minds in grappling with content through meaningful, authentic problems, they will build knowledge and understanding for the long term."

If you increase students' responsibility for learning, offering them freedom and power, they will be able to accomplish more, not remaining dependent on others to continue moving forward; they will strengthen their executive-function skills to enable them to take increasingly greater responsibility for their learning. You can then increase academic rigor through well-crafted assignments, questions, differentiation, collaboration, and more.

A Synergy

When the goals of engagement with content, responsibility for learning, and academic rigor are working in concert, the outcome is powerful and lasting learning (see Figure 1.1). This synergy is critical to the success of the *Learner-Active, Technology-Infused Classroom*.

Figure 1.1. Three Critical Goals
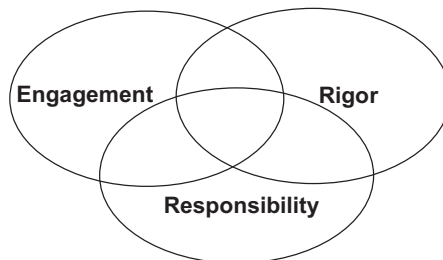
The Students We Teach

The Internet has significantly changed how people communicate, work, collaborate, engage in commerce, and think. Educators need to understand how our technologically advanced world has affected today's students and design classrooms that better suit their learning modalities.

As early as 1998, Don Tapscott described the ten themes of the then-emerging digital (or 'net) generation. They possess a *strong independence and autonomy*, considering they can easily access and challenge information. They reveal an *emotional and intellectual openness* based on their willingness to post their thoughts and opinions on websites. They are *inclusive*, using technology as a means through which to develop a community of diverse individuals with whom they interact. They believe in *free expression and strong views*, having unparalleled access to information and forums. They are *innovative*, continually looking for ways to improve the world around them. They are *preoccupied with maturity*, seeking to meld into groups of people who are older than they. They engage in *investigations*, willing to surf the Internet in search of the answers they seek. They thrive on *immediacy*, spurred on by the instantaneous connection offered by modern cellular phones and the Internet. They are *sensitive to corporate interest*, skeptical that media messages are designed to serve corporate needs. They are mindful of *authentication and trust*, given that, with the open architecture of the Internet, they must continually question what they see and hear. Tapscott (2009) later reinforced this, pointing out how these characteristics have been solidified in these students' adult lives. These adults are now parents of children in school, and yet their digital experiences were nowhere near as sophisticated as those of their children. This and future generations of students deserve formal learning environments that honor their unique characteristics.

Consider a few effects of technology on the digital generation. In a technologically advanced world, you:

♦ Can post opinions through blogs, share videos, upload podcasts, create personal social networking pages, and more. The result is that your students *thrive on expressing themselves in a variety of ways*.

♦ Go to websites and they welcome you, know what you're interested in, and refer to you by name. You create digital avatars that represent you online. The result is that your students *expect personalization*.

♦ Send instant digital messages to whom you want, engage in online environments with whom you want, control your tablet's screen layout, customize your cell phones, and wear technology on your wrist. The result is that your students *demand freedom*.

- Engage in online, interactive environments with others around the world, socializing, creating, and gaming. The result is that your students *thrive on social interaction*.

- "Google" people, use the Internet to learn to pronounce a word, watch a YouTube video to learn a skill, go to the UN website to learn about world hunger, check the weather, and get the news. The result is that your students *demand immediate information—what they want, when they want it*.

- Digitally message several people while searching the Web, engaging in an online discussion, streaming a television program, and posting to social media. The result is that your students *want to be everywhere at once*.

- Grieve the loss of others through social networking pages, raise money for starving people in third-world countries, raise money to support taking a stand against genocide in other parts of the world, and organize political events. The result is that your students are *socially aware and active*.

In our students' lives, the digital world is ever present and melded with the real world. "Very few adults have had any real long-term exposure to the digitally infused life experiences of the students who populate our schools" (Jukes, Schaaf, & Mohan, 2017, p. 31). The digital nature of our students speaks to the need to design classrooms that are engaging, authentic, differentiated, resource rich, collaborative, and that foster greater student responsibility for learning. In short, these are classrooms that support efficacy.

Stories From the Field

Whatever your grade level or subject, you'll want to gain insights as to what learning looks like for your students before and after they enter your classroom. As you read the stories in this book, if your grade level is below the story level, consider what students would need to learn at your level as a prerequisite. If your level is above the story level, consider how the students in the story would thrive in your classroom. Consider how you could interact with the students and teachers in the stories that are at your grade level but in a different subject area. That is, avoid glossing over those stories that are not on your level.

A fifth-grade teacher uses problem-based tasks to drive students into the curriculum through motivating, real-world problems. She has created structures that allow students to learn from her in small-group and independent settings, through written direction sheets, from one another, and

through websites and apps. She made a radical decision to spend only fifteen minutes a day in the front of the room offering the daily "lesson." Even prior to redesigning her classroom, she was a popular teacher. She presented great lessons that were very interesting to her students, merging humor with content. Still, she decided to heed the brain research and limit her amount of time in the front of the room. One day a student approached her and asked, on behalf of the class, if she would present a lesson on equivalent fractions from 11:10 to 11:25, because the students really needed more information on this topic and were all stuck. She gladly complied. As she moved into her lesson, she was happily surprised by how attentive everyone was. She presented; the students took notes; they responded to her questions and asked their own. She admits she was so excited by how engaged her students were that she failed to end at 11:25 and just kept going. Soon students started looking at the clock and fidgeting. Finally, a student said, "This was a great lesson, but we only had until 11:25, and we've got to get back to our work schedules." Imagine a classroom in which students take charge and manage their own time to complete assignments by designing their own schedules. Imagine a classroom in which students take charge and ask the teacher to present lessons that will aid them in problem solving. Welcome to the *Learner-Active, Technology-Infused Classroom*.

I visited a third-grade classroom marked by the buzz of productive discussions. One group of students was working on ways to help their local ecosystem thrive by studying its producers, consumers, and decomposers. Another was working on plans for "A Local Party" in which they have to plan a class party serving only food items produced locally in their state. They were writing math equations to divide up the food items and creating a budget. A pair of students was reading *Stellaluna* (Cannon, 2007). They shared that they are creating a class tapestry of how people are all different and have different backgrounds but are also all the same; the tapestry will journey from hanging in the local library to that of another state to that of another country until it returns to the classroom. One student explained to me that everything they are doing has to do with their theme, which is posted on a classroom wall, "Being Part of a Greater Whole." This is their transdisciplinary theme that ties together the content across the curriculum.

When I visited a kindergarten classroom, I found students in various locations: five in a carpeted meeting area, on the floor with the teacher, engaging with math manipulatives; some at desks creating ladybugs from construction paper; some reading picture books; and some at interactive whiteboards with peers, matching words to pictures. I sat down next to a student who was constructing his ladybug. The conversation went like this:

Me: Hi, what are you working on here?
Student: I'm making a ladybug.

Me: And why are you making a ladybug?

Student: Uh . . . the teacher is reading us a book about a ladybug.

Me: I see your classmates are working on some other things. Are you doing those, too?

Student: I wanted to do this first, then I have to go to the carpet.

Me: And how do you know when to do these things?

Student (pointing to the board): See the list? I can do them in any order.

Me: Ah, I see. I like your ladybug. I see you so far have five spots on the left side and three on the right. Do ladybugs have the same number of spots on both sides?

Student: Oh no, butterflies are symmetrical; ladybugs are not.

My conversations around the room were similar. Students had three markers with their name and numbers that they posted next to activities on the board to indicate to the teacher their activity choice. The teacher was spending quality time with students on the carpet introducing a new math concept. Students who needed help went to one another with success. Even kindergarten students can take charge of managing their time. Welcome to the *Learner-Active, Technology-Infused Classroom*.

The wall of a fourth-grade classroom holds the statement, "Ways In Which We Are Changing The World" with a monthly timeline across the bottom. As students work on various problem-based tasks across the year, they write them on a paper plate and post them on the wall-sized chart. Students animatedly tell me about the current problem they're tackling. The quote at the start of the chapter came from this classroom.

A third-grade teacher was attending a professional-development session and, on a break, went to her classroom to check in on her students. She entered the room to find them engaged in learning as usual, working individually, in pairs, or in clusters around the room. The substitute teacher approached her and said that she'd expected to lead the class as a whole group as she usually did. She began to do so at one point in the day. Soon a student raised her hand and cautiously said, "I'm sorry to interrupt, but we all have things we need to get done. Do you think you could offer this as a small-group mini-lesson for those of us who need it, and the rest of us can work from our schedule?" The substitute teacher was amazed; the classroom teacher beamed. Welcome to another *Learner-Active, Technology-Infused Classroom*.

A Philosophy, Framework, and Solution

It is important to view the *Learner-Active, Technology-Infused Classroom* as a comprehensive framework for teaching and learning, not as one possible method among many that you may use. One cannot be *Learner-Active*

in the morning but not in the afternoon. One cannot use this method for some students and something else for others. The *Learner-Active, Technology-Infused Classroom* is a complex framework of interdependent structures and strategies that, together, provide the best possible learning environment for all students, thus being differentiated in and of itself. Mastering the art of designing a *Learner-Active, Technology-Infused Classroom* requires certain paradigm shifts that will change your view of teaching and learning forever.

There is room for almost any method you may run across in the *Learner-Active, Technology-Infused Classroom*. As you read other books and articles, attend workshops and conferences, and complete coursework on various educational topics, consider how they align with this framework and how they can fit. Unless you're advocating for a totally lecture-based, teacher-centered classroom, most likely you'll find that most of the popular strategies for fostering learning will fit nicely into the *Learner-Active, Technology-Infused Classroom*. Just stay focused on the extent to which you are providing engagement, responsibility for learning, and academic rigor. Remember, though, that a lot of popular teaching strategies and programs today still presume the teacher is the information deliverer. So as you shift your paradigm, consider how these strategies and programs could be modified to work in your student-driven classroom.

This is not a framework that is meant to stand alone; it is meant to be a solution to many of the challenges facing schools today. The *Learner-Active, Technology-Infused Classroom* is the perfect solution for designing classrooms that offer Multi-Tiered System of Supports (MTSS), such as Response to Intervention (RTI). Relatedly, it is the perfect venue for implementing *Universal Design for Learning* (UDL). Schools are pursuing learning environments that provide a 1:1 ratio of student to computing device. The *Learner-Active, Technology-Infused Classroom* provides key structures for shifting from a more teacher-directed learning environment to one in which students engage in learning with significant access to a computer. Schools are looking to provide students with a STEM (science, technology, engineering, and math) or STEAM (add arts) focus. Design process is a natural component of the *Learner-Active, Technology-Infused Classroom* as students identify and solve real-world problems. Schools are looking to build twenty-first-century skills in students. The structures of the *Learner-Active, Technology-Infused Classroom* build all of the targeted skills and more. Schools are considering how to provide virtual learning experiences for students so that they may enroll in a course that they attend via computer. The principles of the *Learner-Active, Technology-Infused Classroom* apply in this venue, as well as in the more conventional physical classroom. Schools are challenged to design effective co-teaching (inclusion) classrooms to provide instruction for all students, including special-needs students, in one inclusive learning environment. The *Learner-Active, Technology-Infused Classroom* is the solution to this challenge,

providing a perfect venue for two adults to share a learning environment without one taking precedence over the other.

Ultimately, consider how the framework and related structures and strategies presented in this book address the needs of your students and of the world of education today. Apply the principles as you make decisions about instruction in the classroom.

What to Expect

Designing a *Learner-Active, Technology-Infused Classroom* requires adaptive change, and adaptive change takes time and mental energy. Embarking on this instructional design journey will take you through three distinct levels in the change process. The first is "dynamic disequilibrium." This occurs when you are implementing new strategies and structures for the first time. One moment you are excited and celebratory, and in the next you find yourself disappointed and in despair. One day you're thrilled that you found this book; the next day you're ready to toss it in the trash. (But please don't.) This is a really important time to keep a journal (written or digital) to track your experiences, successes, and challenges. The act of writing allows you to reflect on events and learn from them. A year from now, the journal will be a wonderful documentation of an amazing journey in instructional design. One teacher kept a journal in her first year of transformation. In her second year, she complained that her students were just not as good at the *Learner-Active, Technology-Infused Classroom* as her last year's class. Then one day she sat down and read her journal from the prior year. She realized that she spent much more time in the fall teaching them the structures. In fact, last year's students weren't all that good at this learning environment either, but she helped them understand it. This year, she just assumed she was going to have students who were starting the year as if they were last year's students at the end of the year. Keeping a journal can provide you with important insights, particularly in your first few years of designing a *Learner-Active, Technology-Infused Classroom*. This first phase of the change process typically lasts a year or less. Once you begin to repeat the instructional design process with a new set of students, you tend to move to the next phase.

Human beings, by nature, seek stability. The early stages of the change process are often unnerving, so a natural inclination is to find those structures or strategies that appear to work the best and adopt them as the definitive solution. This causes you to enter the second phase: "contrived equilibrium." You'll design a rubric template, for example, to which students respond well; and you'll decide that all rubrics should always be written in this exact same way. This is a dangerous phase, because you meet with exciting, successful moments, but, to be honest, you don't know what you still don't know. Often

teachers are asked to provide turnkey training and walk others down the exact path they have taken to designing the *Learner-Active, Technology-Infused Classroom*. I advise against any turnkey training until you've experienced your fourth year of implementing this framework. While you may enjoy the successful achievement of your goals, the journey is truly just beginning, and you have a lot more learning ahead of you. This phase can last a year, a few years, or, in some cases, the length of your career. The key is to push on to the third phase through continual reflective practice.

The third and destination phase of the change process in designing *Learner-Active, Technology-Infused Classrooms* is that of "reflective practitioner." Arriving at this phase means you are continually questioning the structures and strategies you employ and making adjustments along the way. Times change, society changes, students change; and masterful teachers adapt their classroom practices accordingly. Returning to the earlier example, you may find that different styles of rubrics work for different students under different circumstances. You may modify your rubrics based on the time of year, the type of problem students are solving, and so forth. Each time, you question whether or not this is the best possible implementation.

I met with a teacher to review her *Authentic Learning Unit* (*ALU*) and offered several suggestions for improving it. She exclaimed, "You know, *you* wrote this with me three years ago." I smiled and shouted, "I've evolved!" What was acceptable to me three years prior was no longer good enough. Reflective practitioners eagerly open their practice to their own critique and that of others.

Although you may think you can begin at phase three, the instructional design work that lies ahead takes time and is like learning any new skill. Let's face it, if you take up diving, you don't expect to enter the Olympics the following year. Only time will produce improved results. Malcolm Gladwell (2011) claims it takes 10,000 hours of practice to achieve mastery. Use a journal or other means to continually reflect on strategies and structures you are trying and how they worked out. When something does not appear to work, avoid the temptation to revert to former methods. Probe more deeply to consider what structure or strategy you could change to make it work. If you reflect on the situation, you will push yourself to find the key to success.

The Change Process in Action

If something is not working in your *Learner-Active, Technology-Infused Classroom*, it typically means that a structure or strategy is missing. I worked with a very talented first-grade teacher, schooled with innovative methods from Columbia University and the Bank Street College. I visited her classroom one day while her students were working on math activities related

to place value. She had a collection of activity boxes and regularly introduced new ones to the students during their morning meeting time. During math time, pairs of students would select a box and work on the activity. I noticed two girls opening a box and looking perplexed; neither of them could remember what to do with this particular activity. I pointed out two boys who had just completed the activity and suggested they ask them. The girls looked at the boys, then looked back at me and said, in unison, "nah" and proceeded to select another box. I thought this was very funny and shared the story with the teacher, who was, to my surprise, horrified. "I should have been there for them. I should have helped them through it." I pointed out that with twelve pairs of students working on these math tasks, it would be impossible to be present to facilitate every student at the point of needing help. Regardless of your grade level, you no doubt have encountered similar situations. I used this opportunity to introduce the idea of students scheduling their own time. Some activities are what I refer to as "teacher intensive," where students benefit from the oversight and probing questions from teachers. Engaging in a math activity through which students are just learning about place value would be "teacher intensive," as would students conducting and analyzing results from experiments, following a recipe for the first time, and applying a mathematical formula for the first time. Other activities are "non–teacher intensive," where students can work independent of the teacher with success. I asked her what types of activities her students would be engaged in during the day that did not require her to be overly attentive to them. She mentioned buddy reading and journal writing, where students typically engaged in these activities with little participation from her. I suggested that she tell the students that they had to spend a certain amount of time on each of these three activities (math boxes, buddy reading, and journal writing) but they could choose any order they wished.

At first, the teacher was skeptical her students could succeed at this, as she kept fairly tight control over the classroom activities. Over lunch, she pondered the idea and decided to try it. I walked into the classroom in the afternoon, and there were her students with their schedules in which they ordered the activities, all going about their work. Sure enough, only a handful of students were working on their math boxes at any given time, allowing her to spend much more quality time with them ensuring they were building the right understanding of place value.

At one point, the teacher pointed out to me a student who seemed to be rather disoriented, walking around the room with no apparent purpose. Her response was, "See, this really doesn't work for special education students. He's supposed to be buddy reading now." It would be easy for her to have dismissed the idea of students scheduling their own time. In reality, she just needed to add a structure. I talked about how primary students, at first, do

not know how to line up for, say, art class. So the teacher deliberately walks them through one step at a time: clear your desks, sit quietly, table one get on line, nice and straight, and so forth. By the next month, the teacher is simply saying, "line up for art class." So together, we developed a checklist for buddy reading: find a book, find a buddy, find an open spot on the floor, sit down cross-legged facing one another, and so forth (Figure 1.2). The teacher introduced the checklist to the students who needed guidance. They learned the steps to follow the checklist, and it worked! So as you reflect upon your challenges, always consider that you might just need to add another structure or strategy.

Figure 1.2. Buddy Reading Checklist

☐ Get your reading book.

☐ Find your buddy.

☐ Find a quiet, empty spot to read.

☐ Sit down knee to knee.

☐ Open your books.

☐ Decide who will read first.

☐ Read one page while the buddy follows along.

☐ Switch roles.

☐ Read for at least ten minutes.

Imagine, Consider, Create

As you work to design your *Learner-Active, Technology-Infused Classroom*, take time to *imagine* the possibilities, *consider* the research and experience of others, and then *create* your classroom. When you reach the *create* sections, I encourage you to stop and spend some time designing the materials being described. This book is not intended to be read straight through in one sitting. It is meant to guide you through rethinking your classroom and instructional design. You'll note that there will be some structures and strategies that you already use, some that you can easily envision adding to your repertoire, and some that you feel will absolutely not work in your classroom. Start by adding those that make the most sense to you; but never lose track of those seemingly impossible ideas. Keep them in your journal and return to them down the road.

Efficacy for your students is a worthy goal; outfitting them with the knowledge, structures, and strategies they need to accomplish their goals

will help establish the trajectory of their lives. Several years from now, you'll look back on your classroom and find it hard to believe what you've accomplished. The key is to keep on innovating and reflecting. Enjoy the journey!

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