“Look at her paper—she’s the smart one!” It was the first month of school in a third-grade classroom, and I was visiting the students to see if they had any prior knowledge about the brain. This particular school had a 70% poverty rate and the majority of students did not have English as their first language. As I circulated around the tables, I was observing a student writing copiously when I heard it: “Look at her paper—she’s the smart one!” This announcement proudly came from one of her classmates. When I assured him that he along with his classmates were all working hard on the assignment, he agreed, but again shared that this particular classmate would have the best paper.
What I discovered in this classroom was a profound example of a fixed mindset at play—an 8-year-old child who believed that his classmate was the “smart one,” and that no matter the amount of hard work he put in, her paper would always be better. In this case, the child didn’t see that he, too, could be the “smart one” or have one of the “best papers” in his classroom, a mindset I have seen during my time as an educator and consultant often. That’s where this book comes in—to help the many teachers, administrators, parents, and students like the one in this story realize that they can change the way they think about success and intelligence in the classroom.

Can Intelligence Be Changed? What Are Growth Mindsets and Fixed Mindsets?

The belief that intelligence is malleable and can be developed is not a new concept. However, the idea that intelligence can be changed and grown in both children and adults has seen more popularity in recent years thanks to the work of Stanford University professor of psychology, Dr. Carol Dweck, and her 2006 book, Mindset: The New Psychology of Success, which looks at the concept of “growth mindsets” and “fixed mindsets” among successful people as far-ranging as athletes Alex Rodriguez and John McEnroe, CEOs Lou Gerstner and Ken Lay, and teachers Marva Collins and Rafe Esquith. Dweck’s research and development of the fixed and growth mindset theory has also contributed to a major shift in thinking about student learning and intelligence.

Dweck (2006) described a belief system that asserts that intelligence is a malleable quality and can be developed—a growth mindset. Learners with a growth mindset believe that they can learn just about anything. It might take some struggle and some failure but they understand that with effort and perseverance, they can succeed. The focus of a growth mindset individual is on learning, not on looking smart. An educator with a growth mindset believes that with effort and hard work from the learner, all students can demonstrate significant growth and therefore all students deserve opportu-
How Mindsets Affect the Classroom

nities for challenge. Add to this belief an effective teacher armed with instructional tools that differentiate, respond to learner’s needs, and nurture critical thinking processes, and you have a recipe for optimum student learning.

Dweck also presents a different belief system about intelligence; the belief that intelligence is something you are born with and the level of intelligence cannot be changed—a fixed mindset. A person with a fixed mindset might truly believe that he has a predetermined amount of intelligence, skills, or talents. This belief system is problematic at both ends of the continuum. For those students who struggle or do not perceive themselves as smart, it becomes a self-fulfilling prophecy. Because they don’t really believe that they can be successful, they will often give up and not put forth effort. For those students who are advanced learners, they can become consumed with “looking smart” at all costs. They may have coasted through school without really putting forth much effort, yet they are often praised for their good grades and strong skills. Often, an advanced learner with a fixed mindset will start avoiding situations where she may fail; she can become “risk adverse.” In her book, Dweck (2006), using tennis star John McEnroe as an example, noted that a person with a fixed mindset often is a high achiever who blames outside forces when he or she “fails” at a task.
Think for a minute about your own mindset. A mindset is a set of personal beliefs and is a way of thinking that influences your behavior and attitude toward yourself and others. An educator’s mindset directly influences how a child feels about him or herself and how he or she views him- or herself as a learner. A child’s mindset directly affects how he or she faces academic challenges. A child with a growth mindset perseveres even in the face of barriers. A child with a fixed mindset may give up easily and not engage in the learning process.

A fixed or growth mindset can directly affect family dynamics as well. It is not surprising to note that parents also have a big impact on how children view themselves. They will often view their children through specific lenses: “Joseph was born knowing his math facts,” “Domenic has always asked good questions,” and “Catherine just knows how to interpret a piece of literature.” These are all examples of a fixed mindset, even though the statements sound positive. These statements describe who these children “are,” not the effort that they have put forth. As educators, think of some occasions when you have heard a parent describe her child in a way that rationalizes perceived weaknesses: “She is just like me; math was not my thing either” or “I can understand why he does not do well in reading; I never liked to read.” (Ideas and resources for helping parents embrace a growth mindset will be discussed in Chapter 6.)

Shifting Mindsets

Breaking down the belief that intelligence is static can be a challenge, but with the proper groundwork and education, little by little a mindset can shift. Expecting a shift in mindset immediately is not realistic; after all, some educators have had a fixed mindset belief for most of their lives. Even after someone has had a self-proclaimed mindset shift, she will need to make a conscious effort to maintain that belief.

A fixed mindset has an elasticity that continually wants to spring back. For example, a twice-exceptional child (a gifted student with learning disabilities) called to share a college schedule
with his mother who also happened to be an educator. The parent had a mindset “shift” several years ago and had proudly told me all she did to encourage a growth mindset culture within their home. The schedule her son shared involved 8 a.m. classes and a course roster that included macroeconomics, international business, accounting, analysis of media, and management. His mother noted that the fixed mindset mentality buried within her wanted to scream, “Are you crazy? You are setting yourself up for failure!” Instead, she responded, “It sounds like a challenging schedule, and I know that with continued effort, you will be able to manage it.” Believing that all children can, with effort, persistence, and motivation succeed, is the heart of this belief.

Brain-Based Research

One of the reasons for this shift in thinking about intelligence is due to the available technology that examines the function and make-up of the brain. Recent brain research negates the notion that intelligence is “fixed” from birth. Formal and informal studies demonstrate that the brain can develop with the proper stimulus. Other current research in neuroscience emphasizes the concept of neuroplasticity. Neuroplasticity is the ability of the brain to change, adapt, and “rewire” itself throughout our entire life. Anyone who has ever witnessed someone recovering from a stroke has had a front row seat in watching neuroplasticity. In the case of a stroke, for most patients, the brain begins the rewiring process almost immediately so that patients learn to speak and become mobile again. (However, it takes the hard work and effort put forth in therapy for stroke patients to fully regain what they’ve lost.) Neuroplasticity works both ways; it creates new connections and eliminates connections that are not used very often.
Understanding and believing in neuroplasticity is an important part of a growth mindset belief. Malcolm Gladwell, author of *Outliers: The Story of Success*, related the idea of neuroplasticity back to academic success when he discussed how some children are at a disadvantage academically simply because they don’t have the opportunities to learn at the same levels of their peers during the summer months. He shared the following,

> It turns out that summer vacation is a massive disadvantage for poorer kids. Richer kids get a lot of help over the summer. Their homes are filled with books and things that advance their knowledge; they go to camp and have all these other activities. But a poor family can’t do that. To improve that, we as a society would have to provide it in the first place. During the school year, poor kids actually outlearn richer kids. Then they stall over the summer. (Newman, 2008, para. 5)

This is an example of how neuroplasticity eliminates or weakens connections—in this case, the connections go unused for the children whose families cannot afford academic programming during the summer while the students who are provided with such opportunities during the summer can maintain their learning.

We now know so much more about the neurological aspects of the brain that it cannot help but inform the way we approach learning, instruction, and motivation. It directly affects teachers’ beliefs and expectations about student potential and achievement. It is when educators and children (as well as their parents) learn about the brain and all of its potential and when they witness the impact that it has on learning that mindsets can begin to shift (see Chapter 8 for a discussion of how you can teach children about the brain).
Intelligence and Measuring Intelligence

Is it possible to increase your IQ? The University of Michigan partnered with the University of Bern to conduct a study that looked at the possibility of increasing IQ. This 2008 study (see Palmer, 2011) required participants to continually play a computerized memory game that involved remembering visual patterns. Each time a different pattern appeared, the participants heard a letter from the alphabet in their headphones. They were asked to respond when either the visual pattern on the screen or the letters they were hearing in their headphones were repeated. The time between the repeating of patterns and letters became longer as the game became more difficult. The researchers found that as the participants had practice and got better at the game, scores on IQ-style tests increased (Palmer, 2011).

This research and other studies like it contribute to the understanding of malleable intelligence, a key factor in growth mindset and a concept many educators struggle to understand. In general, educators do not have a lot of background in cognitive science. I recently asked several groups of educators, “What do cognitive abilities tests/IQ tests measure?” Without exception, there was hesitancy in responding to the question; after giving sufficient wait time, a few responses were shared: “a child’s capability,” “how smart they are,” and “their innate ability.” What surprised me more than their responses was the observation that so many of these teachers and administrators just could not answer the question. There are many times that educators are in situations where data is shared about a student, and that data often includes cognitive scores from gifted and talented screening processes, special education screening processes, and/or IQ tests. Who knew so many educators really have no idea what these assessments actually measure?

Cognitive ability tests measure developed ability. Therefore, if a child has never had an opportunity to develop reasoning processes, the outcome of one of these assessments would not be noteworthy. David Lohman (2002), professor of educational psychology at the University of Iowa and cocreator of the Cognitive Abilities From Mindsets in the Classroom by Mary Cay Ricci © 2013, Prufrock Press Sample reproduced with the permission of Prufrock Press Inc. (http://www.prufrock.com)
Test (CogAT), stated that abilities are developed through experiences “in school and outside of school” (para. 3). When parents and educators review these “intelligence” scores, assumptions may be made about the child and beliefs may kick in that place limits on the child’s potential.

The Role of Potential and Hard Work

Potential. What a great word. It is all about possibilities. However, “potential” is often used in ways that can make me uncomfortable. Think of the phrase, “He is not working to his full potential” or “We will help your child reach his full potential.” How does potential become “full”? Is it something that can be checked off on a report card? Potential can never be “full”; it is never-ending and our possibilities are infinite. As a person grows, learning and experiences become more sophisticated and challenging, growth continually occurs, and potential is never reached because it is impossible to reach. Perhaps many thought Michael Phelps reached his “full” potential after his 10th Olympic medal in 2008—a feat he went on to shatter at the 2012 Olympics when he won eight more medals. Believing that intelligence, talent, skills, and, yes, even athletic ability can be developed encourages these endless possibilities.

We are all born with potential. However, we might have innate strength or capacity in one or more specific areas. These strengths can manifest themselves in many ways. Strengths can be shown physically, creatively, socially, academically, perceptually—the possibilities are endless. Every child has strengths, and some children are born with a greater degree of specific strengths compared to their peer group. For those children with outstanding specific strengths or those who are identified as “gifted,” their strengths deserve to be further developed. However, it is also important to consider that other children have the potential to work side-by-side or even surpass those with intrinsic abilities.

Think of a time that it took you a little longer to learn a new skill. It may have been something that required physical coordination, playing a musical instrument, using a new piece of technology,
or learning a new instructional strategy. Then, once you learned this new skill, it became a strength for you. In fact, you surpassed many others who have had this skill for years. As an adult, you had the drive, motivation, and persistence to decide that reaching this goal was important to you. No one took away the opportunity to let you learn, no one told you it was “too hard” for you, no one told you that this was “not the right group” for you. No one put up barriers to hinder your learning.

Yet, sometimes our education system does all of the above. Our school structures eliminate opportunities, communicate low expectations, and prematurely remove students from challenging environments. Many reasons exist for hampering student potential in this way; one major obstacle is how we judge both adults and children by the speed in which things are completed.

Our society has become one that values pace. The faster, the better. If we don’t get our medium, decaf, skim, extra hot, caramel latte in less than 2 minutes, then we are annoyed. If our Internet connection is not instant, then we grumble or click fast and furiously. If a driver in front of us is not going at a pace we agree with, then we use the horn or moan out loud. If an educator describes a bright child in their classroom or school, then we might hear him refer to the child as “quick” and those in the bottom reading group as “slow.”

We need to step back, take a breath, and realize that it is not about how fast students master learning. It is about the persistence and effort that they put forth.

Growing School Communities That Embrace a Growth Mindset

Developing ways to establish a school community that promotes the belief that intelligence is malleable is the major goal of this book. The entire school staff—administrators, teachers, support staff—as well as parents must truly believe that all children can be successful. At the same time, children must also accept this
belief system. Recall the vignette that opened this chapter—did the little boy who believed his classmate was the smartest embrace the idea that he too could be successful? Not so much, even with my prompting. Can you imagine how his attitude may have been different in this situation if he did ascribe to the belief that all children have the potential to experience success?

It is all about beliefs and expectations. One way that contributes greatly to both children and adults embracing this belief system is by learning about the brain and all of its possibilities (again, see Chapter 8 for learning tasks that both children—and adults!—can take on to learn more about the brain). Neuroscience has grown by leaps and bounds in the last several years and educating ourselves and our students about the brain has a huge impact on student effort and motivation.

Why Mindset Matters in Schools

Carol Dweck (2010) conducted a study of middle school math students in New York City. The students showed positive growth when they believed that intelligence is malleable and when they learned about their brains. Studies have shown that many students enter middle school with the belief that we are all born with a specific, set-in-stone intelligence level or a fixed mindset (Dweck, 2010). Similarly, it was shared with me that in one Washington, DC, suburban school working on changing its students’ mindsets, it was determined through student feedback and interviews that more than 60% of the children entering grade 6 believed that they were born with specific academic strengths and weaknesses and that they could not change. Based on this statistic, I asked myself, at what point do children transition to this kind of mindset?

This prompted me to undertake my own studies. I began collecting data in kindergarten classes. In the fall, kindergarten students were surveyed to capture their beliefs about intelligence. In the two classrooms I surveyed—a classroom made up of high-poverty, diverse students and one with primarily middle-class students—100% percent of the children demonstrated a growth mind-
They came to school in kindergarten thinking that they could learn and be successful. They were enthusiastic, full of promise, and ready to absorb social and intellectual knowledge!

With that optimistic data in hand, I moved on to a first-grade classroom; again, students were surveyed to capture their thinking about intelligence. In this case, only 10% of students in the first-grade class demonstrated a fixed mindset. For the most part, these first graders replicated the enthusiasm of the kindergarten students with the exception of only a few students who felt that some students were born smarter than others and that we cannot really change how smart we are. Time to move on to second grade. In these classrooms, I discovered that 18% of students demonstrated a fixed mindset. Are you beginning to see a pattern? With every increase in grade, more and more students believed that intelligence was a fixed trait: They agreed with the notion that “Some people are smart, some people are not.” But perhaps the most surprising result was the large jump between second and third grade. Of the third-grade students I surveyed, 42% had a fixed mindset! Table 1 displays these findings.

This data sends a message loud and clear: We need to start working with educators and children as early as possible so they can maintain a belief system that communicates that all students can succeed. Our children walk into the school building on the first day of kindergarten ready to learn, believing in themselves with all of the optimism a 5-year-old can muster. We need to capture and sustain that mindset as they make their way through school. Now, how can we accomplish this?

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<th>Growth Mindset</th>
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