Susan Engel

# The Children You Teach

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## USING A DEVELOPMENTAL FRAMEWORK IN THE CLASSROOM

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*This book is dedicated*
*to my wonderful students*
*at Williams College.*

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I thank my students at Williams College. I love them, and I love talking with them about developmental psychology, children, teachers, and schools. Many of these chapters started in lectures for my courses and reflect the conversations that ensued with my students. I particularly thank Anna DeLoi, who read an early draft of this book and gave me terrific feedback.

Finally, I thank my editor, the delightful Zoë Ryder White. I learned over the course of this project that she loves writers and writing as much as she does children and teachers. What a combo, and what a privilege for someone like me.

# Prologue

To be a good teacher, you need to be smart, energetic, and knowledgeable, and you need to really like kids. But that's not enough. The best teachers are also genuinely *interested* in children: what they feel, how they think, and who they are. I don't mean merely an interest in the particular lives and quirks of your particular students, though that is wonderful. I mean a curiosity about what makes children tick—how and why they change as they grow.

I taught young children well before I studied them. When I was practically still a child myself, I was hired as an assistant in a summer program for children ages three to eight. I discovered I was good at it. And I loved it. I was one of those lucky people who, as my grandmother used to say, had a way with kids. Even though I was just a teenager, I knew how to take charge, and children were drawn to me. We came to life around one another.

But even so, when my college advisor urged me to take a course in developmental psychology, I resisted. Sure, I loved teaching, and would probably teach again, but why should I study it? That seemed so pedantic. I just liked *doing* it. I didn't need to cover over my natural feel for kids with a lot of jargon and data. Then, in my sophomore year, I took a course on language development. It changed my life. I was transfixed by studies that examined children's thought processes, identified the mechanisms by which they learned to talk, and explained how their abilities changed over time. I loved the cleverness of the experiments. Stories about children that might, at one time, have seemed merely cute or simply mundane suddenly became fascinating. A two-year-old who opened and closed her mouth after watching a box open and shut was taking a first step in her effort to represent the world around her? A three-year-old who announced that the written number six was cheerful was laying the groundwork for understanding metaphors? A four-year-old who realized that the number of soup bowls he was setting out corresponded to the number of people eating dinner was discovering an important mathematical principle? I couldn't get enough of it.

Competing theories about child development riveted me. Should we be more focused on what children have in common (for instance, the ability to talk and an interest in how adults behave), or should we pay more attention to the ways in which they differ (for instance, some children are shy and others extremely gregarious, some leap at abstract problems while others are rooted in the concrete)? Did development unfold in a straight and predictable line, or did the sequence depend on a child's upbringing? Would it be more accurate to say that children's minds undergo major transformations or that they simply learn more and more as they get older? Could you separate children's emotional lives from their intellect?

And what about all those cool experiments? Babies watch a film in which a duck swims toward a curtain. The duck disappears behind the curtain. After a few seconds, two ducks emerge from behind the curtain. As the babies watch, researchers measure their heartbeats and discover the rate changes, suggesting the babies are surprised when a second duck appears. This shows that babies have an instinct for addition. I found it so intriguing to think about what it took to get inside a young child's mind. I was hooked and decided that I would be a developmental psychologist.

There was one thing I adamantly rejected during those first years of my love affair with developmental psychology: I refused to think that my work as a teacher, something I had done with ease and by instinct, had anything to do with my new skills as a social scientist. Studying children and working with them remained two separate parts of my life. During my last two years of college, I taught part-time in two public schools in New York City. Meanwhile, at college, I carried out experiments looking at how children used metaphors, and I wrote papers on important shifts in children's emotional lives. But in my mind, teaching in those two schools and the psychological research I was doing in college had nothing to do with one another.

After college, I went straight on to graduate school so that I could keep doing the work I now felt was my life's calling: developmental research. Two things happened in graduate school that changed my thinking forever.

The first was a dawning insight, rather than a sudden light bulb. I spent my mornings recording moms and their toddlers at breakfast to find out how children learn the meanings of words. Meanwhile, I spent my afternoons earning extra income by teaching at an elementary school which was across the park from my campus. All week I shuttled back and forth between studying in grad school and teaching in elementary school. In my graduate program we read research, designed new experiments, analyzed data, and argued about theories. In the elementary school teachers shared insights about how to get the kids to behave, what kinds of books sixth graders should read, and how to set up a good science project for little kids. It began to seem crazy to me that those two worlds were so disconnected.

My professors—all active researchers—rarely stepped inside a classroom. When they did, it was only to pull "subjects" out for an experimental session. More typically, graduate students collected the data, which meant that the actual living, breathing kids were only data points on a graph to the people writing the scientific papers.

The same was true in reverse. The teachers I worked with were smart and really loved kids. But they seemed to know little about current research—its methods or findings—and equally little about the processes and mechanisms that had shaped the students they dealt with. I could see that it hampered them; they had to rely on hunches, old habits that might or might not really work, advice that was good only some of the time, and whatever rules had been established by the administration. They were particularly vulnerable to pressure from parents. When a mom insisted that her kindergartner should be doing more challenging language arts, the teacher had little information to bolster *her* approach as she explained that it would be better for the little girl to spend more time playing than to complete sentences on a worksheet. I began to feel an urgent need to get these two smart, knowledgeable groups of people to talk to one another.

The second thing that changed my thinking occurred in my final year of graduate school, when I had my first child. The moment Jake was born, the worlds of teaching and research were transformed. I suddenly took all of it personally. Some of the things Jake did were uncannily like the research I had read. He sobbed with sadness when I left him with someone else. I understood why. He used both feet and his hands in an endless string of experiments, trying to make a shiny crib toy wiggle. I knew he was learning first lessons about causality. However, at other times he did things that totally contradicted the research. Though easily startled by new people who came into his orbit, he was not consistent, as the literature predicted. Instead he treated new foods, new machines, and new animals like old friends.

Theories that had intrigued me in a scholarly way now came to life as I watched my little boy crawl, put things in his mouth, watch the world around him, and change in surprising ways. But very soon that also altered the way I thought about the children I taught. They were complex, vulnerable, and roiling with inner lives—full persons, with lives far richer and more dynamic than was visible through my daily encounters with them in the classroom. I kept thinking of a line from an Anne Tyler book, about a woman who has just given birth to her first child and keeps looking around with wonder at each person she passes on the street, thinking, "That person was *born*" (1988). I now kept looking at kids in my classroom and thinking, "You are not just my student. You are a *person with a psychological history*. You were a baby once. You nursed or you drank from a bottle. Perhaps you cried a lot, or maybe you were as calm as the Dalai Lama. When you leave my classroom each day, perhaps your mind is teaming with ideas from the book I read aloud to you. Or maybe school disappears from your thoughts the minute you walk out the door, crowded with things more important to you." Suddenly it seemed imperative to me to connect real children with theories and studies from developmental psychology.

After graduate school I took a job as a full-time classroom teacher. Eventually I returned to academic life, teaching at a college. And I had two more children.

Meanwhile, more and more of my students asked me to talk about education as well as development. I had stumbled upon an opportunity to teach future teachers that no plan book, curriculum guide, or snazzy set of rules and techniques could replace the power and utility of thinking about children from a developmental perspective.

Now, whenever I give talks to teachers, I emphasize the power of a developmental perspective. Invariably, people come up to me afterward and say something like, “I get it. You convinced me. Understanding children’s development will help me. So, what should I read?” And I find myself standing there with my mouth slightly open, at a total loss, not sure what to suggest. I can think of books on intellectual development and books on friendships. I can think of books comparing different cultures and books on children’s emotional problems. I can think of books about toddlers and books about five- to seven-year-olds. But I can’t think of one book that connects all these strands in a way that teachers would find useful. It’s worse when I try to think of specific scientific articles. Each is, by necessity, so narrowly focused and technical that it can’t possibly help a busy teacher. Often the particular results, attained in a lab under precise conditions, shrink to almost nothing when applied to real children in noisy, complicated, real-life settings. Those articles are written for other researchers. They don’t say much that feels directly relevant to the issues that teachers face each day. The pages that follow are my attempt to fill that void.

This book is a collection of stories about real children and teachers. But it is also about children’s development. Each chapter tells a story about one particular child, teacher, or classroom dilemma. No child can be understood just by thinking about one issue at a time (for instance, moral development *or* friendship). No classroom challenge can be solved only by looking at how mathematical knowledge is acquired, or by tracing the steps that lead to literacy. So, each chapter integrates several topics, which, when put together, can illuminate the classroom or the child.

The chapters are not similar to one another. Some are short; some are long. Some cover many different topics in developmental science and others zero in on just a few. Some have happy endings. A few do not. Some highlight the impressive ingenuity and insight of teachers, and others describe the missteps even the best teachers can make. Any teacher reading this book will identify with some of the teaching practices and might be put off by others, thinking, “I would never do that.” I have described a wide range of actual teachers and approaches, not just the best ones. I think that conveys a more realistic picture of real teachers and real schools. You may encounter suggestions for approaches you’ve already been following for years, perhaps without knowing the developmental science that explains why they work. My goal here is not to romanticize or demonize teachers, but to provide a clear-eyed look at how the practice of good teaching can and should be based on a rich understanding of what goes on in classrooms and how children develop.

In the table of contents, along with each chapter title I mention the topics in developmental psychology that you will encounter in that story. You can read just the chapter that speaks to the issues you are concerned with. But if you read all of the chapters, I hope you will end up with more than the sum of the parts. Taken together, they are written to show how looking at children through a developmental lens can change what happens in the classroom and can transform the craft of teaching, making it better for everyone involved.

At the end of the book, I have included a user's manual. It lays out the ideas and suggestions contained in the preceding chapters, offering concrete methods for using a developmental framework to guide your teaching. This book is nothing like most of the practical guides teachers are often encouraged to use. I've included very few lists and fewer instructions. But my hope is that it will be one of the most practical and useful books you'll come across for your work as a teacher. Feel free to look at the Epilogue first, if it will make each story more helpful to you.

Once you have finished the book, I hope you will look at and interact with your students and classroom in a new way. But what I hope most is that it will help you to *think* differently about the children you teach.

# CHAPTER ONE

# What Did Aida Want?

Motivation ⋆ Engagement ⋆ Social Development

AIDA WAS BEAUTIFUL, but sad-looking. At seven, she had long brown hair that was, at times, wavy and sun-burnished. However, more often it just hung down the sides of her head, limp and straggly. Her hazel eyes didn't sparkle, but sometimes, when she smiled, or cracked one of her sly, quiet jokes, her eyes lightened for just a few seconds. Then she returned to that vaguely flat look—small shoulders slightly rounded, gait reluctant. When Ms. Endicott saw the girls standing by their cubbies first thing in the morning, they leaned toward each other, telling jokes, hearing secrets, and touching one another's clothes. Aida was right in the mix. It was clear she liked the other girls and they liked her. But as she walked through the door into the second-grade classroom, a shadow seemed to fall over her. As the day went on, she'd wilt more, as if each lesson, each activity, was a greater burden than the last. And it wasn't as if leaving school lightened her load. She drooped out much the way she had drooped in.

Most seven-year-olds still like school. If they have friends, that is. Regardless of whether they learn easily or labor over lessons, social inclusion is key. A spate of studies has shown that when you are seven or eight, feeling liked is crucial to thriving at school. Ms. Endicott knew how important friends were to her young students.

And it was obvious to anyone passing by the hallway that Aida felt liked. So that wasn't the problem.

Academics weren't an obvious problem either. Aida could read well enough. Nor was she lagging way behind in math. But she didn't appear to be making much progress either. She wobbled right on the edge of difficulty. But so did lots of kids. The academic skills required of second graders stumped many of her students at first. Ms. Endicott couldn't really put her finger on the problem.

Maybe Aida would turn a corner, once she really got to know the group, the room, and Ms. Endicott. Maybe she was just one of those kids who took a while to settle in. But by February, Aida appeared to be just as lackluster and reluctant as she had seemed in September. And her academic progress had stalled. She could write answers to questions about the books she was reading, but she always offered the bare minimum. And Ms. Endicott noticed that her sentences were cursory; she rarely chose nouns and verbs that tell you a child is eager to express her specific idea or feeling. She read a heart-wrenching story about a little boy named Sudan who was teased about his hair (*An Enchanted Hair Tale*, by Alexis Deveaux). Then she completed the sheet that Ms. Endicott used to make sure children understood what they had read and to help them learn how to reflect on literature. Next to the question, "What was the most important thing that happened to the main character?" Aida wrote, "Sudan was teased." Next to the question, "How did the main character feel when this happened?" Aida wrote, "He felt sad." Her answers were not wrong. They were perfectly adequate. But they didn't exactly jump off the page. In fact Ms. Endicott had no indication that Aida had strong feelings about anything she read. When she asked Aida outright, "So, Aida, whaddya think? Was that book *An Enchanted Hair Tale* any good?" Aida looked at her calmly and said, "Yeah, I guess." Ms. Endicott had the feeling Aida was trying, in her tactful way, to figure out the quickest way to leave the conversation.

Math was the same. Aida could add and subtract in her head, but haltingly. She could translate simple word problems into equations too, which was all Ms. Endicott was looking for at this point. But Ms. Endicott noticed that the minute there was anything the least bit unusual in a word problem, Aida came to a dead standstill, as if her mind had turned off. When Ms. Endicott looked over Aida's scores on the weekly math quizzes, she saw that Aida was hovering just above the thirtieth percentile. Ms. Endicott felt uncomfortable thinking it, but maybe Aida just wasn't particularly smart.

# How Smart Do Children Need to Be?

One of the most taboo subjects in schools is intelligence. Most teachers would hesitate to say out loud that one child is very smart and another not so much. There is an implicit ethos that all children should be considered equally intelligent (though no one seems to hesitate to say that one child is more artistic than another, or that one is more athletic than another). By the same token, some teachers work on the assumption that going to school will make children smarter. Neither of these beliefs is, generally speaking, true. By and large, the data continue to confirm what most psychologists have believed ever since Alfred Binet developed the first IQ tests. Children vary in their fundamental ability to learn. At the lowest end of the continuum (below 85), children need special help and cannot be expected to function in the usual ways in school. The children who score on the highest end of the continuum (above 115) may also need special opportunities since they learn at a much faster rate than the others. This idea, though generally accepted among scientists, has had its critics.

> *One of the most taboo subjects in schools is intelligence.*

Over the years psychologists such as Howard Gardner and Robert Sternberg have challenged the standard view of IQ. They and others have argued that intelligence cannot be captured by one number. Instead, they say people vary in the kinds of intelligence they possess. Someone may, from their perspectives, have a lot of verbal intelligence but little kinesthetic intelligence. Or someone may have a lot of "book smarts" but little practical acumen. But on the whole, the data don't support the idea that there are many kinds of intelligence. Children may *show* their intelligence in one domain more than another (one child is good with shapes, another with words, one child seems to shine in school tasks but fumble in more worldly, practical settings), and they may have exceptional talent at a certain activity without being all that smart. But talents and interests are not the same thing as intelligence.

Most researchers agree that intelligence measures are based on the speed and accuracy with which a child can learn new information and apply it in various situations. In recent years, that simple definition (and approach to measurement) has gained support from research showing that, even in infancy, children vary in how quickly they process information. Scientists can test an infant's speed of processing by measuring how long it takes each baby to get bored with looking at a particular image and turn to look at a new one. Those scores from infancy predict scores on IQ tests when the children are older. They also predict a fair amount about children's academic ability in school.

If you measured speed of processing in ten infants, and then administered a proper IQ test to them when they were eight, and gave them an SAT test when they were seventeen, the child who got the lowest score as a baby would still probably get the lowest score on the SAT, which is one way of showing that intelligence is highly stable. The data also clearly show that, by and large, intelligence is inherited (Plomin and Loehlin 1989). Two people with high IQ scores are likely to have a child with a high IQ. The same is true for parents with low IQ. Children who are adopted at birth often appear to be more similar in their intellectual capacity to their adoptive parents when they are four. But by the time they reach adolescence, they are likely to get a score more like that of their biological parents than the family they are now part of. And here we come to a complicated wrinkle that frequently muddies the discussion. It is true that children inherit much of their intellectual potential from their parents and that intelligence is quite stable. But there is a very important caveat to these two robust findings. A variety of outside factors can inhibit a child's native intelligence. These factors include malnutrition, exposure to drugs, poverty, extreme stress, sustained and pervasive racism, and schools that don't acknowledge their cultural habits and values. What this means is that, although intelligence is inherited and stable, by the time they are in school many children face disadvantages that eat away at the intellectual capacities with which they were born. To make sense of this paradox, reconsider the ten babies whose speed of processing was tested. If they were all the same race, and grew up in the same economic bracket, their rankings would likely remain the same over time. But now imagine that they are not all from the same racial groups and aren't part of the same economic bracket. Imagine instead that three of them are African American and seven are Caucasian (and that they are all growing up in the United States). As infants, one or more of the black children might score the highest of the whole group. But by the time they take the SAT tests, though the Caucasian children will remain similar in comparison to one another, the African American children might have lost ground. This is not due to any racial difference between them. It's because children grow up in unequal circumstances (Hart and Risley 1995).

Ms. Endicott knew all of that. She also knew that by definition, most kids have average intelligence, and that's all they need to be able to learn in school. Aida may not have been the Einstein of the group, but that wasn't the problem. Something told

Ms. Endicott that Aida's lowish scores did not reflect her real ability, and that her halting response to schoolwork wasn't the whole story. When she listened to Aida talking with friends, she heard a vocabulary and quick wit that signaled a perfectly smart girl. Ms. Endicott had the feeling it had less to do with her intellectual capacity and more to do with her on-off switch.

When it came to group projects, Aida usually pitched in. But she typically chose the smallest, simplest task—whatever presented the least challenge and effort. For example, in November Ms. Endicott put the kids into groups of three, and told them to design and build a new kind of vehicle that could take a person from one place to another. She gave them all kinds of materials—spools, wire, toilet paper dowels, buttons, paper, feathers, balsa wood, cardboard—and equipment—glue guns, small nails and hammers, rubber bands. She also gave them a few guidelines: they couldn't bring in any kind of motor from home, and the whole thing had to be made from scratch. Most of the kids were very excited by the project, intrigued by the possibilities, and the slight scent of competition between the groups. They plunged into the process of planning, testing, and fabrication with great zest. Aida's group wanted to build a wagon that could carry a person on land and water. The other two children in her team pitched various schemes, and argued about whether it would be a boat with wheels, or a wagon with a sail. Aida stayed silent. She kept glancing over to another group where her two best buddies were collaborating. When it came time to build the "Sailwagon," as they ended up calling it, she did the hot gluing. She was deft, and did a good job. But she left all the more complex and mentally challenging tasks to the other two. Aida was the same whenever there were team projects, —whether the projects were more conventionally academic (solving math problems together) or required some invention and creativity. When the children were asked to correct one another's work, Aida was thoughtful and careful. She seemed to enjoy the others when they worked together, but she barely attended to the actual content of the project. What she liked was being with the other kids. She liked it even more when those kids were her pals. In fact, all the fun she had with friends became a way of avoiding anything that had the whiff of learning. Ms. Endicott realized she had gathered a small collection of insights but wasn't sure what to do differently. Aida remained a mystery to her.

Sometimes at lunch in the faculty room, when teachers vented about various students, Ms. Endicott would mention Aida. One colleague told her to let it be. Aida wasn't causing any problems, and not every child could be a star at school. Another colleague suggested she spend just a few moments with Aida each day, making sure Aida felt good about herself. One day a student teacher, who periodically joined the lunchtime conversation, chimed in and asked why Ms. Endicott didn't bring the parents in and tell them she was concerned about Aida's lackluster performance. He explained to the others that he had been learning in his graduate program about how important the home-school connection was. Another teacher offered, "Her father just lost his job. They're going through a rough time at home. She may need therapy."

Ms. Endicott knew these suggestions were reasonable enough, but they didn't really hit the spot, either. She didn't think Aida was actually sad in any particular way or in response to something that had happened at home. Her sadness seemed to be subtler than that—more a way of being than a response to a temporary situation. She also didn't think Aida felt timid about her skills. She didn't lack confidence per se. Instead, it appeared to Ms. Endicott that Aida simply had little to no interest in shining at her work. And before she talked to Aida's parents, she definitely wanted to get a better sense of what made Aida tick. But she wasn't sure how to proceed. She might just keep an eye on her for a while longer.

Then one day during a second-grade team meeting, when Ms. Endicott was fretting that Aida seemed to be drifting away academically, a paraprofessional who came to help a little boy with cerebral palsy spoke up. "What is she like at recess?" The other teachers looked at him in surprise. What, Ms. Endicott thought, did recess have to do with Aida's academic progress?

Ms. Endicott had genuine affection for most students. She wasn't cuddly but the kids knew she liked being with them, and her decisive energy and clarity drew them in. She was also a master of the volatile classroom, easily quieting disputes and keeping the group on track. That wasn't all. Relatively comfortable with teaching second graders math and science, she was especially strong in language arts. She had loved English literature in college and had soaked up her M. Ed courses on language arts for elementary school children. She read a lot of children's books, used the Daily Five approach, and was quick to pick out the child who needed outside reading help. Over the years she had absorbed all kinds of particular solutions to specific problems. But faced with the subtle and murky mystery of a kid like Aida, Ms. Endicott felt unsure. Aida did not make trouble, she didn't have a reading disability, and she was neither bullied nor a bully. None of the tools Ms. Endicott had learned in graduate school, or after, fit this particular situation. So when the paraprofessional suggested watching Aida at recess, it threw Ms. Endicott for a loop. What did the paraprofessional think she could possibly see on the playground that might help her in the classroom?

Like most teachers, Ms. Endicott's knowledge of child development was cursory. What she had learned in grad school came from a textbook that simply outlined the basic stages of development and offered milestones along various dimensions: children of three begin making friends, seven-year-olds cannot think abstractly, nine-year-old girls express relational aggression, and so forth. The book had offered some neat little diagrams outlining the major areas of development and a few grids showing important benchmarks. Other teachers had generously wanted to help fix the problem. Yet none of them, including Ms. Endicott, really understood what the problem was. A few days later Ms. Endicott asked the paraprofessional why he thought she should watch Aida on the playground. He shrugged. He didn't have a lot of formal education in child development either. But his work as a paraprofessional had taught him one thing for sure. To find the particular way to help a child, you needed to know her from the front, the back, and the side. He had found that a lot of the most useful information came in bits and pieces. In fact, often he learned the most useful things about his students when he first walked into the classroom, or sat on the side, waiting for the regular lesson to end. He also had noticed that it took him a while. No one snapshot would do it. And sometimes the best information came outside of the classroom—the places where children weren't doing what they were told, but were just being themselves. He said, "You know, you've been telling us about the things Aida doesn't seem to enjoy. Why not see what you can learn about her when she's doing something she wants to do? Don't you want to get inside her head a little more?"

A light went on inside Ms. Endicott's brain. She realized she had gotten stuck using the same old information that usually guided her, even when it wasn't helping. She needed some new kinds of information. Instead of tracking Aida's grades on spelling tests and book reports, or simply noting that she was not unpopular, Ms. Endicott decided to start describing Aida at various times during the day, whenever she had a moment to take a few notes. She'd keep a little Aida book with her at all times. Whenever she had a moment, she'd write down where Aida was, whom she was with, and what she was doing. She'd also make a few notes about Aida's mood, her energy, and anything particular she overheard her say or saw her do. She kept remembering what the paraprofessional had said, laughing in a slightly self-deprecating way: "What do I know? I'm no psychologist. I just grab at bits and pieces. I never know which bit is going to tell me something new about my student."

One of Ms. Endicott's notes read, "Aida is standing in line with the other kids, waiting to go to gym. She's smiling at something the boy in front of her is saying. She makes a funny face. He laughs. I guess the kids find her witty. Her body seems so much springier than usual." Another note read, "Aida is at the table with Bailey and Joanne, answering the problems I gave them about the number line. Bailey and

Joanne are looking at their papers. Aida keeps looking down, but it doesn't seem like she's actually taking in anything because she keeps looking back up; I'm not sure what she's focused on and I don't think she is either. But just now she saw me watching her, and she bent her head toward the page. I'm going to go over and see if she needs help." A third said, "I just looked out the window. Aida is pretending to hold a mic and is doing a song and dance for some of the other kids. It looks like she's trying to be Pink. She's so saucy out there. The kids are eating it up."

She noticed that Aida was always liveliest when she was outside of the classroom. The dull look descended during lessons and work time. She also began to notice how often she urged Aida to work by reminding her that her grades could get better. That made her decide to look back at Aida's reports from the previous spring. Again and again, the comment said, "Aida needs to try harder." But what did it mean to ask a seven-year-old to try harder? And try harder at what? Ms. Endicott decided she needed to revisit what trying hard looked like in a second grader.

## What Does It Mean to Do Well?

You don't need to be a psychologist to know that when children are motivated, they can overcome almost any obstacle, and that when they are not, even the brightest kids eventually flounder in one way or another. Most teachers see it every day in their classrooms. A kid who is eager to do well makes great strides. The one who could care less, or seems too tired to be bothered, falls behind.

But doing well can mean many different things to a child (and a teacher). It can entail winning, improving, executing a plan, finishing a task, or fulfilling a personal goal. It's only in recent years that psychologists have begun to tease apart the big glob we casually think of as motivation.

Research suggests that at an early age, children vary in their basic amount of drive (Plomin et al. 1993). One child seems to have steam for every kind of challenge and task—the kid who cleans off the tables with gusto, asks for the hardest book to read, and attempts the most ambitious collage. Some children, however, are motivated only for certain things: they give their all on the soccer field but seem virtually paralyzed during the academic part of the day. Or a child might dive into anything related to books and writing, but become constrained and cautious when doing math. Then there are the kids who don't seem motivated for anything. They don't try at math or reading. They don't raise their hands during group discussions. They never volunteer for special tasks. They never hustle. And yet, if you asked most teachers to line up their students from most motivated to least, they wouldn't be able to do it. Part of the reason is because children are so uneven in this regard, highly motivated for one thing but not for another. But that's not the only reason it's hard to compare children when it comes to motivation. The other reason is that, although motivation is in some ways a drive, like appetite, it is an extremely complex drive, shaped by several forces.

Scientists have learned that motivation is as much a thought process as it is a feeling. What a child *believes* about trying hard matters as much as how much get-up-and-go he has or how much he wants to do well. Carol Dweck's research (Yaeger and Dweck 2012), in particular, has shown that only some children think that effort pays off and that success is the product of industry. They tend to value small improvements as much as they do the final outcome or their standing in relation to others. They compare where they are with where they've been. They are motivated toward mastery. In contrast, some kids, who may be equally motivated, have a different goal: they are oriented toward success. They care less about getting better than they do about looking good. For these kids, a grade or a prize matters more than improvement. Studies have shown that these two orientations have significant implications for children's approach to schoolwork. For instance, in the classic demonstration, children who seek mastery will choose a harder task, knowing that though they may not succeed, it will push them to get better. Children who seek success, on the other hand, tend to choose an easier task, drawn to the prospect of winning, whatever winning might mean in a given setting. These differences in motivation seem to rest on two very different ideas about accomplishments. Children who seek mastery tend to believe that people get better at things a little at a time; progress is, in their minds, incremental. Children who seek success, on the other hand, have an implicit belief that a person is either good at something or not. What's the point in trying, if you know you have no basic talent in that endeavor?

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As Ms. Endicott thought over Aida's behavior, she realized that Aida probably had an *entity* theory of ability. She thought she wasn't good at math or reading and didn't think anything could change that. It's not that she wasn't eager to do well; it's just that she hadn't acquired a belief in the power of effort and incremental progress. But such an orientation is not fixed for life. Dweck and her colleagues tried encouraging children in very specific ways. They highlighted small improvements in students' work ("You got five more problems correct today than you did last time I gave a math quiz."). They also tried explicitly teaching students that perseverance and practice lead to greater accomplishments than mere native ability. When they used these techniques, children were surprisingly quick to shift their theory of ability. And as a result, their response to academic challenges shifted as well. But what leads a child to favor one of these beliefs over another? Why did Aida have an entity theory of ability?

Needless to say, the answer is not completely straightforward. Several factors shape the amount and kind of motivation a child possesses. For instance, it's unsurprising that parents have a hand in determining their children's motivation. But the way in which they influence their children is unexpected. Researchers used to think that parents who emphasized talent would have children who carried around an entity theory. The parent who constantly said, "Well, you're just naturally good at that, so of course you won," was likely to have a child who felt there was no point in trying. By the same token, children whose parents emphasized effort by saying things like, "You may win the race this time. You practiced all summer, and that's going to make a huge difference," would be likely to have an *incremental* theory and would work hard, taking pleasure in small gains. Researchers thought, at first, that parents' own views on ability and effort would mold their children's views.

However, when Dweck and her colleagues asked subjects a series of questions about their parents' attitudes toward effort and accomplishment, young children seemed vague. It seemed they didn't have good antennae for their parents' theories of ability. However, when probed about how their parents responded to setbacks, they gave clear, definite answers. A six-year-old might not know if his mom thought it was a good thing to work at something a little every day. But he sure knew what she said and did when she was disappointed or frustrated with an outcome. He couldn't remember whether she mentioned how long he spent on his spelling words or whether his dad talked about people's natural talents. But he could tell you what his mom did when she got fired. It may well be that parents don't make many explicit comments, one way or another, about the value of persistence and effort. But in this case, actions speak louder than words. When a child hears his mother announce she finished in the slowest group during the 5K race, he may not pay much attention. But when he hears her make plans, "Starting this week, I'm going to work out five days instead of three. I want to do better next year," it sinks in. Parents' responses to their own failures make a big impression on children. Perhaps Aida's parents had kept their setbacks to themselves, or perhaps they responded to failure with sadness and alarm rather than new determination. Perhaps when Aida had hit a snag on the playground, or in kindergarten, she hadn't been encouraged to try again. But really, how would it help Ms. Endicott to speculate endlessly about Aida's home life? And thinking back to the paraprofessional, she reminded herself that it wasn't necessarily useful to think about Aida in terms of strengths and weaknesses. Could she describe her without evaluating her?

After about three weeks of writing short descriptions of Aida, taken at odd moments throughout the day, Ms. Endicott sat down and looked them over. She thought she saw a pattern blinking out at her. She consulted some articles that helped her make sense of her notes. All the times when Aida seemed to have slumped were just after the children were asked to learn a new skill or task and just before they began working on it. Challenges made Aida fade.

Ms. Endicott thought she might try encouraging Aida's small efforts, commenting more on progress and less on whether Aida's work was good or not so good, and that she could model positive responses to setbacks. In fact, she would highlight those, showing all the children that she didn't care one whit whether they succeeded at any given task, but only about their response when something was difficult. She knew, from all of her failed New Year's resolutions, that deciding to emphasize effort wasn't enough. She needed a concrete plan. She decided to keep two little lists side by side for one month. On a small pad she drew two columns. In one column she'd record, with a little check mark, every time she commented on a child's small progress or effort (she decided not to make a distinction between the things she said privately to one child and the things she said to several children or the class; she simply wanted to track her overall behavior, assuming it would eventually have a general effect). In the second column she'd note down every time she said something like, "Pete, you're so great at math." She figured she should get a clearer sense of whether she was cancelling out her efforts to foster an incremental theory of ability and performance motivation with spontaneous bursts of enthusiasm for talent and success.

Meanwhile, Ms. Endicott noticed something else that brought her up short. Looking over the various descriptions she had written, she confirmed her earlier vague impression that Aida wasn't sad all the time. Not at all. The notes made it clear that Aida came alive when she was talking with friends. She seemed energized, wittier, more verbal, and quicker to come up with astute observations. Strange as it sounded to her own ears, when Aida was with others, she seemed to brim with energy and focus. She seemed motivated.

There's almost no way to get a baby to try harder. When one is motivated, he is unstoppable (imagine a baby who is learning to walk, trying again and again, no matter how often he falls). And when he isn't interested, nothing will work (imagine getting a baby to pay attention to a movie when he's hungry). This has to do with the fact that early on, a child's immediate needs (to walk, to explore interesting new objects and events, to eat) are everything. A baby cannot imagine the future, and he cannot think abstractly, so he cannot organize his current behavior for some vague or future goal. But by the time children are six or seven, they have attained several cognitive skills that allow them to do slightly unappealing things for the sake of an appealing future goal—they can practice doing addition problems, dribbling a basketball, or playing a melody so that they will ace the test, win the game, or shine in the concert. But that works only if the test, game, or concert is in two weeks. Asking children to work hard day after day on activities at which they don't excel so that ten years later they can get into a good college is completely different. It's a strategy that is almost always doomed to fail. As Ms. Endicott thought about this, she realized that asking Aida to try harder so that she'd get better grades later wasn't going to work. But couldn't she entice Aida, bit by bit, to try harder with more short-term rewards?

Most teachers know that if they reinforce children's good behavior, with even the smallest rewards, and consistently do not reinforce bad behavior, they can shape many aspects of a child's performance. By smiling or putting a gold star next to their name each time they raise their hand to speak, and ignoring them each time they simply call out, you can condition most kids to behave in certain ways. A system of rewards and punishments, based on a behaviorist model, works quite well at helping teachers mold certain aspects of what children do in school. A gold-star plan might get results. But what *kind* of results? Ms. Endicott didn't just want Aida to comply and act like a better student. She wanted Aida to feel differently about learning.

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In a classic study of motivation, psychologists Lepper and Greene (1978) invited elementary school children to join them in a small room down the hall from their regular classroom. They invited children to draw using some nice crayons and colored pens. In one condition the children were promised a small gift if they engaged in the drawing. In another condition they were not (at the end of the activity, some of these children were offered a reward anyway, while others were not). The researchers watched all of these children as they drew (the process of drawing) and analyzed the drawings themselves (the product), and then, a few days later, they once again made the drawing materials available to all the participants (another way of measuring the children's response to the original activity).

What they learned might surprise some teachers. Children who had been promised a reward seemed less engaged in the activity, drew less complex and interesting drawings (as judged by a team of trained coders), and were less interested in drawing when the materials were once again available. In other words, by adding an extrinsic reward, the researchers had lowered the intrinsic appeal of drawing. The lesson from this is pretty clear: given activities that are naturally appealing to many children (like making things), rewards hurt rather than help the learning process. Why would this be the case? Because children do what adults do—they try to make sense of the situation. Given a promise of a prize, their unconscious calculation is that the activity must be slightly dull or unpleasant if they need a prize to do it. Over time, activities that a child might have liked and been eager to work at become chores whose only appeal is the reward they might get at the end. And though the promise of a reward might work from time to time, when there is no longer a reward attached to the activity, the child is likely to abandon the topic as quickly as she can. If you doubt this, just think of the books you might have loved reading, if they hadn't been assigned at school. What did Aida find absorbing?

Ms. Endicott made an inventory of the activities in which Aida seemed alive, interested, attentive, and activated, and the activities in which she seemed to withdraw or turn down her psychological volume. Sure enough, Aida was most alive when she was talking or working with friends, least alive when she was isolated from friends. The one writing activity that she perked up for was when she and a few friends were allowed to write a play instead of a story or a report. She particularly enjoyed writing the dialogue and describing the personalities of each character. Being with her friends was the surest way to energize Aida. But there were small hints that her interest in people extended beyond the immediate. Yes, she liked lunch period and hallway chatter. But there was more to Aida than that. When Ms. Endicott looked over her notes again, she saw that Aida had leaned in eagerly the day they discussed a book about a little boy who felt like an outsider in his town. If ever a child had embodied engagement, it was Aida listening to that story. She had also seemed unusually animated and interested when the class had worked together on a big class poster about how to handle conflict. All along Ms. Endicott had assumed that Aida's social liveliness was, at the least, irrelevant to her academic success and more likely an impediment to her learning. But what if she turned that around? What if she thought about Aida's time with friends as a clue to her interests?

Ms. Endicott began to wonder whether it made any sense to ask Aida to apply herself to tasks that isolated her from other kids and that seemed far removed from the things that mattered to her. And yet, Ms. Endicott knew that Aida had to make progress in addition, place value, and spelling. There was so much she needed to master this year in order to do well going forward. Hitting just above the thirtieth percentile in math didn't seem good enough, given her potential. Thinking about this brought to mind an image of Aida sitting at one of the worktables, head bent over her paper, hair falling limp in front of her eyes. And then, out of nowhere, Ms. Endicott imagined Aida as a four-year-old, laughing and making up crazy rhymes with her friends. She had probably been a bouncy little girl, brimming with funny thoughts and games. That had been a mere three years before.

Ms. Endicott had been so focused on where Aida (and all of her second graders) needed to go that she had lost sight of where Aida had been. And yet seven-year-olds are more closely connected to their younger selves than they are to their future selves. Not long before, like all three- and four-year-olds, Aida had been powered by her own intrinsic interests, perhaps inventing scenarios with her friends, spending time planning the rules of their games, spending hours adorning themselves in the dress-up corner and enacting the roles of doctors, firemen, and mommies. She had worked hard at playing with friends and mimicking the rules and information of the adult world around her. Isn't that what all the time in the dress-up corner had given her? As Ms. Endicott daydreamed about four-year-old Aida, it dawned on her that second grade could build on those interests and energies, rather than abruptly replace them.

As Ms. Endicott mulled over ways to use her newfound insights, something worried her. Her impulse was to make the social world more central to Aida's school day. But the conventional wisdom said that friends would distract Aida from learning. The trouble with conventional wisdom, however, is that it's often wrong. People pass on ideas to one another, and if the ideas feel right, those ideas settle in and eventually seem like facts. Once such a fact has taken hold, people tend to notice when something confirms it and overlook the experiences that don't. This is known as confirmation bias, and everyone is vulnerable to it. But for teachers, confirmation bias can play out in particular ways unique to educational settings. So, for instance, many teachers lean toward the idea that friends distract one another. Schedules are created to ensure children socialize at recess and learn during class time. The idea that friends and learning are a bad mix tends to get reinforced by daily encounters. Each time two friends giggle during reading time, a teacher takes that in as one more piece of evidence that friends shouldn't work together. But because of the way confirmation bias

*Each time two friends giggle during reading time, a teacher takes that in as one more piece of evidence that friends shouldn't work together. But because of the way confirmation bias functions, they might not even notice all the times children get more out of what they read because they are reacting to it with a buddy.*

functions, they might not even notice all the times children get more out of what they read *because* they are reacting to it with a buddy. There's nothing wrong with confirmation bias; it's human. However, it can get in the way of good teaching practice. Luckily, in this case we have data to overrule the conventional wisdom and overpower our confirmation bias. The data show that kids actually get more out of their academic tasks when they can work with the friends they choose. Though there are risks (giggling, chatting, distraction), those risks are far outweighed by the benefits, which include enjoyment, a sense of well-being, a feeling of autonomy and choice, and opportunities for collaboration. This last one is particularly interesting because it is counterintuitive. The prohibition against cheating, or leaning on others' learning rather than on one's own, can obscure a fundamental truth about learning: learning is almost always a collaborative process. Most teachers put kids into work groups some of the time, but they might make collaboration more central if they understood how powerfully it supports intellectual growth.

Aida found time with her friends to be meaningful. But there was more to it than that. She had also brought her seven-year-old mind to the topic of friendships. She liked being with friends but also thinking about friends. This explained why she was so interested in sorting out social conflicts and mulling over moral dilemmas in reading time and social studies projects. Her energy for friends had begun to shape her intellectual concerns. Ms. Endicott could use that.

She decided that she would invite Aida and her friends to form a work club. Each day the work club would get forty-five minutes to school one another on the things they found hardest to do. Each child in the club would have a chance to teach the others at whichever skill he or she excelled. Ms. Endicott started by getting each child in the group to identify the thing he or she felt most competent to teach. Aida chose Spanish, which she had always spoken with her grandmother. Being an expert at something, and sharing that expertise with other kids, was just one more way for her to become invested in school. Aida and her friends loved the club. After six weeks, they gave a demonstration of what they had each taught each other to all the other kids in the class (who had long since formed their own clubs).

Next, Ms. Endicott suggested to Aida and a few of her friends that they write a play together rather than write about the books they had read. They could use language arts time to plan their play and could perform it for the class in a few weeks. The girls loved the idea. But people don't change overnight. Even children. Aida sat quietly while the others argued about what the plot of the play should be. She seemed, once again, to be fading. Ms. Endicott, who had dropped by for a few minutes each morning to eavesdrop as the girls tangled over the direction of the play, saw an opening for providing a little more guidance. She said to them, "Plays need to have a problem in them. Maybe you can make a play where a group of kids fight about something and then figure out a solution.” She had, quite casually, taught them something essential about good writing and good storytelling, skills that were key to her language arts curriculum. But just as importantly, she had provided them with a plot idea that she knew would draw Aida back out of her shell. Knowing a lot about what goes into good writing, and knowing a lot more than she had about Aida, provided Ms. Endicott with a suggestion worth a week of lessons. As she left the group, she heard Aida say, “Let’s make the gang of friends find a llama walking down the street, and then they can fight about who gets to keep the llama.”

That paraprofessional had opened a door for Ms. Endicott. She began by thinking about the nature of motivation and engagement in seven- and eight-year-olds. Then she deliberately set about to notice where and when Aida was engaged. Finally, she reconstructed the road Aida must have travelled to become a seven-year-old who felt reluctant to try hard at difficult things. Ms. Endicott found a few simple ways to help Aida try hard and to transform tedious and futile hours into something Aida could plunge into. Recess was no longer the only part of the day where Aida came alive.

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