

second nature

HOW PARENTS CAN
USE NEUROSCIENCE
TO HELP KIDS DEVELOP
EMPATHY, CREATIVITY,
AND SELF-CONTROL

ERIN CLABOUGH, PhD

BOOK EXCERPT



Preface

WHEN MY OLDEST child was 8, he said to me, “Mama, does my brain control me, or do I control my brain?” My 6-year-old asked if alcohol was a kind of poison (as I hid my wineglass). My 4-year-old wanted to know what cheeks are for. And my 2-year-old would gleefully smack me not so gently in the face, laugh, and run away so I’d chase him.

They were each at different stages of discovery. These stages change as children grow and their brains continue to develop on the continuum of maturity. My kids are my real connection to the science I engage in every day. Even as a person trained in molecular biology, I’ve found the strength of their genetics overwhelming. How could they all share the same gene pool and yet be so unique? Each of them approaches problems differently, struggles with different things, and performs different skills with innate effortless-ness. As their mom, it didn’t take long before I started to wonder how I could meet each of their individual needs—while parenting all of them at the same time.

I started looking at my own profession for answers to this question. I’m a professor of biology at a small college. In my lab, I do basic research on how our brains develop, how neurons connect, and how the things that we’re exposed to can alter who we are as people. What could the neuroscience I was teaching and researching tell me about how to raise my kids?

As I explored this question, I discovered that much of neuroscience applies directly to parenting, including the fundamental facts about how humans learn on a cellular level, how and when certain areas of the brain develop, how brain development is linked to behaviors we see every day, how practice works to make something a habit, and how making decisions has a powerful impact on both parents and kids.

My research also showed me that our society emphasizes some qualities at the expense of others. We say we value things like creativity, empathy, and self-control, but we don’t act like we do. Based on what I learned, I now believe that these are the things that kids really need to be successful, and to be good

people, throughout their lives. I also figured out that, contrary to popular belief, these qualities are not innate traits or talents, but skills that can be learned. And we, as parents, can help our kids learn them.

Building Specific Brain Connections

To understand how to cultivate creativity, empathy, and self-control in our kids, as well as teach them how to use these skills purposefully (in the act of self-regulation), we need to understand how our parenting is shaping our children’s brains. *Synaptic plasticity*, or *neuroplasticity*, is a highly dynamic process in which connections between **neurons** (signaling brain cells) fade away or strengthen depending on how frequently they’re used. Everything we do as parents strengthens some neuronal connections in our children’s brains while leaving other connections undeveloped or underdeveloped.

If we want our kids to develop creativity, we need to help their brains build the neuronal connections that allow them to be creative. It’s the same with empathy, self-control, and self-regulation. And the key to building the neuronal connections for any skill is practice. Neuroscience shows us that just as practice helps our kids learn relatively simple skills like walking, throwing a curveball, or rapping the lyrics to one of the songs in *Hamilton*, practice can also enable them to learn the more complicated skills of being creative, expressing empathy, and maintaining their self-control. There’s nothing special about the way we learn these skills; they may be more complicated, but the brain uses the same machinery to incorporate them into who we are as people. (At the same time, we can help our children to *not* practice the behaviors we would love to see disappear so that the neuronal connections underlying those behaviors weaken.)

The beauty of neuroscience is that once we demystify things like creativity and empathy and break them down into teachable components, it becomes clear that our brains all follow the same rules; we’re all governed by the neural networks that we activate. Despite the clear and sometimes overwhelming individual differences in the ways we behave, our similarities on a

neuroscientific level are staggering. We see that our parenting efforts, particularly early in development, can literally change the architecture of the brain in lasting ways.

Your Road Map

This book explains why the skills of creativity, empathy, and self-control, plus the all-encompassing skill of self-regulation, are so important, and it provides a road map to parenting for these skills. In part 1, I share why I've become convinced that these are essential skills that every kid needs to learn—for both their short- and long-term happiness. I explore the neuroscience behind these skills and the intersections between them. Then I show you how you can bring all of this information together, using parenting techniques that both create space and provide guidance for kids to be able to function independently in ways that make us proud and make them happy.

Then I focus on each of the skills and what we can do as parents to help our kids develop them through practice. Part 2 explores the importance of creativity (both in itself and as a platform for higher-level thinking) and how parents can focus on creativity in a more purposeful way. Part 3 shows you multiple ways of looking at the idea of empathy and the enormous benefits that fostering empathy has for kids. Then it provides activities to help kids practice it.

Part 4 focuses on self-control and how to enhance it, but also discusses the somewhat misguided view that self-control is the *most* important skill needed as kids grow up. While good self-control may keep us out of jail, self-regulation is the key ingredient to a happy and successful life because humans need so much more than simply not being bad. The most fulfilling experiences are not about inaction, but rather they come from being able to manage situations well when we need to put ourselves out there, when we work toward a goal, and when we can manage to get what we want without hurting anyone else. Part 5 provides information about how self-control, empathy, and creativity come together in the brain, theories behind self-regulation, and parenting tactics to keep your kids as motivated as possible and working toward being autonomous.

There are two ways to use this book. To get an overall parenting perspective, it can be read all the way through. For each of the skills, there is at least one quick, rudimentary test to see where your child is in the skill developmental process. You can see which skills your kid has already developed and where some practice would be useful. Alternatively, if you already know what you want to work on with your kids, you can jump to part 2, 3, or 4. Remember that self-regulation is what we're actively working toward, so part 5 will be important for everyone.

Your kids won't need to actively work on all aspects of these qualities because they likely already have some of them; they're part of what we think of as their personalities. You'll see that each skill is broken down into several parts: Creativity is defined as either self-expression or as innovative problem solving (applied creativity), and both definitions are important. Empathy is divided into emotional, cognitive, and applied empathy, all of which are valuable, though applied empathy is what we're talking about when we mention a compassionate kid. Self-control is an essential step on the way toward great self-regulation. These skills all come together in the ability to be a resilient problem solver, and that's what we're ideally working toward.

Finding your own children among these definitions will help you get to know their character better, and it helps you figure out how to best parent each child. For example, one of my daughters is highly expressive with her creativity and is very emotionally empathetic. During conflicts, she will have hurt feelings and can get frozen, so we actively work on applied creativity and cognitive empathy as problem-solving techniques. In contrast, one of my sons can solve any problem using creativity and has high levels of cognitive empathy, but he has little emotional empathy. Every day, he and I talk about the impact of actions on others, and we work on self-control so that he doesn't plow right through conflict situations. The skills my kids were born with are different, but the values we work on are the same.

Short-Term Gains and Long-Term Goals

Although it's important to be long-sighted when parenting, it's not just about the endgame. Parents deal with daily crises. If you commit to working on creativity, empathy, and self-control and self-regulation with your kids, you will be resolving the immediate threats to family harmony: those tantrums, the lying, and the bickering. Why? Because nearly all behavior problems kids have are associated with these skills—or an underdevelopment of them.

But beyond that, developing these skills in your children means you are fostering their default way of thinking about any given situation. You are providing a platform for their perspective. Just as important are the actions they will be able to take because of that perspective. The ability to think critically and then make decisions plays a vitally important role in a person living the life they choose. You can feel creative or empathetic all you want, but if you don't act on your creativity and empathy, then those things will never make an impact. If you don't interact with the world, no one will ever know what you think inside.

So, when we parent to cultivate these three specific skills, we're not just putting out parenting fires, we're also laying the neural groundwork for our kids to become happy, successful, emotionally resilient adults. It benefits them (and us) not only in the short-term, but also in the long-term. In other words, using neuroscience to inform our parenting

can determine not only how our kids behave now, but also what kind of adults they will become.

Every parent reading this book is reading it because of love. We're trying to fit together all the ways we know to love someone well into a parenting push that might launch our child's boat in the best direction.

We all come with certain starting material. But that's all it is—a starting place. Parenting works by supporting or not supporting certain connections within our child's brain. That's the internal map we're crafting and the literal mind-set that our child will navigate by. Despite all our best intentions, we can't tell our kids how to live; we have to show them, and they have to experience it. Just as we can't expect a child to start running without practicing walking first, we can't expect her to be creative, be empathetic, or exercise self-control without practice.

Neuroscience tells us that neuronal pathways that are used frequently while we're young are more likely to be used in the future. It's our job as parents to help this connective process along, making sure that certain behaviors in our kids become *second nature*. They may not have been born with these characteristics, but you'd never know it when you're talking to them as adults. It will become their default way of being—the platform from which they approach the world—and developing these pathways is what this book is all about.



Erin Clabough, PhD, is a mother of four and a professor who teaches biology and neuroscience. She writes for the popular media, and her scientific research on brain function and development has resulted in many peer-reviewed journal articles.

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