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# Foreword

**W**hat a historic time for education in the USA! The Common Core State Standards, new assessments to measure how well students are learning them, and neuroscience is edging out behavioral psychology as a major driver of pedagogy. As educators search for some help through such major transitions, Pamela Nevills's new book offers great understanding and insight to guide educators to success in increasing student learning in the 21st century. Pamela's previous work linking brain research to improve the teaching of reading has helped an endless number of teachers gain discernment in instructional practice for literacy. Her successful application of applying some basic brain anatomical functions, and memory models, combined with her experience and research of best practices, brought a new and valuable perspective to teaching students how to read at various grade levels. Being ahead of her time, it's obvious that she is excited now that such perspectives are being applied to the Common Core Standards and "the art of teaching can be unleashed as teachers call on their own thinking brains."

This book will help prepare teachers for the new demands on students' brains as they take on standards that elevate thinking and problem solving above rote memorization. I am particularly impressed with how Pamela is able to pinpoint the key instructional shift that the Common Core Standards demand: students talking more to respond to increasing depths of knowledge and inquiry. I look forward to the great realization that English learners talking much more in class about their learning will wonderfully impact their English fluency. Brain research has long touted the value of writing, and now the Common Core is emphasizing it, too. Nevills also connects this to how learning spaces will need to adapt to support all this deeper learning. Instead of applying the findings from neuroscience to just reading, Pamela Nevills's work here can be applied across the curriculum.

Also, *Build the Brain the Common Core Way* is not just about applying an understanding of the brain to teaching students. A critical part of

implementing the new standards is applying this understanding to professional development for educators. I use the term *educators* rather than teachers because I believe this book can help administrators as well as those in higher education who are responsible for preparing teachers. In fact, I look forward to a time soon when basic understanding of how the brain learns will be common knowledge among parents.

We are experiencing a major shift in education in the United States, and much of it is driven by an increased awareness of how the brain learns. Again and again I have witnessed the application of such awareness to school systems result in continuous improvement of student learning. This book will provide a comforting understanding of why the Common Core will be successful; it will require students to think. How the brain learns and thinks is the basis for our district's curriculum, instructional and assessment decisions, and is the foundation for our continued success.

Now, Pamela Nevills's work can help you implement the Common Core Standards and improve learning and skills your students will need to succeed in the 21st century.

—Justin Cunningham, EdD

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Small School Districts' Association Outstanding  
Superintendent of the Year, 2013

# Preface

It is uncommon to find books by teachers for teachers. Expert teachers are doing all they can do to keep up with their teaching. When they pass a group of students to the next level they enter a phase of regeneration for the new group in the fall. Many books about teaching are by nonclassroom authors: retired teachers, consultants, researchers, psychologists, district personnel, or university professors. To read, gather resources, review or conduct research, access experience, investigate, validate, and turn a mountain of information into something meaningful and readable for teachers and people in charge of educational systems takes more than tenacity; it takes boatloads of thoughtful, reflective TIME.

There is an innate excitement, passion for learning, and yearning to get to work that exists in learners who are engaged with a significant project. Students who are fortunate enough to be in school programs that ignite them with desire to know and discover feel this way. I felt just like that about this project, writing this book. It started as I read and heard more and more about the Common Core State Standards (CCSS). My interest piqued as I realized that this is a significant change—a conglomerate of individuals have taken ahold of revamping educational priorities and deemed that children need to learn at substantially higher levels of thinking. I wanted to know how this happened. Chapter 3 is the result of my research into what the common core is, and what it is not. Also, the movers and shakers were identified: foundations, state governors, universities, and educational agencies; all working together to say, “Enough!” Students simply are not prepared for the constantly changing world that exists for them as adults or as college or career learners.

## **UNIFY EDUCATIONAL PRACTICE WITH BRAIN SCIENCE**

My excitement intensified as I grabbed ahold of the implications for my professional career passion, unifying educational practice with information from neuroscience. If students need to develop deep thinking skills, become

critical thinkers, and be able to validate and talk about their thinking, then the neuroscience of learning is painstakingly relevant and necessary. There are “neuroscptics” who would like education to wait and not apply brain research to the classroom until we have better understanding of how the human brain learns (Dayal, 2013). There is no validity to their concerns. Although some have misinterpreted brain science research and caused the public to be swayed by “neuromyths,” there is enough purposeful information for neuroscientists and educators to unite, converse, and share professional evidence. The new field of neuroeducation has been birthed.

If education held to this “let’s wait” interpretation, there would be no common core. The CCSS are based on a premise that there are answers and there are more answers, and there are correct answers that have not yet been discovered. Knowing that does not hold learners from learning foundational elements for each of education’s subjects. Such are the “big questions” that teachers are encouraged by the common core to pose to their students. Some simple answers are correct, but not complete. As students progress through their education years they revisit the questions that are not yet solved adequately, and grapple with them once again for more in-depth answers. Neuroscientists will continue to expand on what they currently know about how the human brain learns, and educators can gain more insight into the mysteries of the mind. But let’s enjoy what we now know and put it to use.

There are many well established truths from neuroscience that help teachers be better directors of learning. Teachers can understand working and long-term memory. They can use information about neuroplasticity to inform their classroom practices. Knowing that active engagement stimulates neuron networks in specified places in the human brain encourages them to plan activities that request students to be active in their learning. Understanding why some students are attentive and are able to filter unneeded distractive sensory input and that other students have trouble staying on task is useful information. Helping students know how to help themselves develop as competent learners is important work that makes sense when it is put in “brain terms.” All these insights came together in Chapter 4. With this on paper, I eagerly continued to write about all that was bubbling inside my head.

## **EARLY ADOPTERS FOR THE COMMON CORE**

Next, I needed to know what was happening already across the nation. My digging and investigative efforts yielded great rewards. There are some early implementers who are bold in their teaching and/or learning



approaches. And they care enough to share their efforts. My daughter, who teaches high school courses, teacher friends, and colleagues validated what I learned as I visited professional conversations at social networking sites. All this information is so available, so inviting, and so important for what is happening across the nation with this educational reform movement. Realize that the common core has the most potential to make a difference for students that I have experienced in all my years of education. And, unlike previous books I authored, most of my resources have a website attached to them. This is a dangerous spot to be in, because they all have to be verified at the time of printing, and I hope they remain available to the reader. Learning and producing are so different in the age of computers and electronics. The common core begs for classroom projects that take advantage of all that is there for the students.

## **COMMON CORE RESOURCE**

This book is a resource for every teacher. It is intended to spark their energy for the entire common core implementation process by empowering them and exciting them about their role, their potential. Principals and other administrators are encouraged to see the talent and persistence in their teachers. Readers will find enticing, fresh teaching strategies particularly in Chapters 4, 5, and 6. These ideas beg to be tried immediately, because they are easy to implement and powerful for student learners. Teachers need to thirst for more ways they can provide interesting, quality experiences for their learners as they are expressed in the common core expectations. They have more reason to collaborate. Professional relationships will thrive as the curriculum is completed and an instructional scope and sequence emerges that has not been provided through the common core. A new way of doing school, by shifting the focus from how teachers perform as lesson presenters to how students behave, as the actor/learners on center stage is an extreme change.

Chapter 1 draws the reader's interest with something different, changes in perception for how we do school. It invites school personnel to challenge their thinking from what we have always done to the potential of the common core. A further look at common core expectations leads to what teachers will need to do to retool in Chapter 2. In this chapter, teachers are challenged to plan their lessons differently, and for those who evaluate teachers to turn their focus on what students are doing to learn. Each chapter has strategies and activities that can be used immediately. After a thorough look at the common core in Chapter 3, the reader learns or revisits some of what neurology has to offer education. Neuroscientists have

provided abundant insights from what they have discovered about the act of learning. Knowing what is going on when students engage in active thinking gives teachers an advantage in planning and directing classroom activities. This is the intent of Chapter 4, How Learning Happens.

The next chapter was a lot of fun to write, because it accepts the premise of “learning is all about what is happening for students.” It provides a new way to design lesson or big unit study that fits the common core requirements. It is filled with practical, try-this-now ideas. Chapter 5 talks about what teachers can do. It is followed by what the students can do in Chapter 6. This one has a somewhat whimsical excitement with even more gratifying possibilities than the previous one. But do not be misled; there are serious activities for students with respect for the important learning that must be done. Readers are challenged as directors of learning to place their students in situations that draw them into intense involvement as learners.

The following chapter, Powerful Staff Development for Adult Learners, is intriguing because it looks specifically at professional teachers as learners. Teachers are promoted to be leaders of their peers during workshops and supported by research and best practice to do so. Chapter 8 talks about the very change process itself and how school districts can articulate vision and direction while providing support services. A soft change is described as school personnel move incrementally to meet the CCSS expectations. The system directing common core implementation is challenged to move steadily, purposefully, and incrementally over time.

This book is a resource for every educator and encourages them to jump start the entire common core process. It plants a desire for teachers to take a fresh look at learning and promotes confidence by identifying all the skills teachers already possess. The American Educator (2013) addressed teachers’ perceptions of the common core. Members of American Federation of Teachers (AFT) responded to a survey about the CCSS and overwhelmingly supported it. While 78% of the teachers said they already received staff development related to the CCSS, less than half, 43%, felt the training was adequate for them to teach to the new standards.

Approaching the common core from a new perspective and comfort level is needed. It is important to listen to friends who are teachers and those exiting the field. I was curious enough to listen in on conversations among teachers through professional Internet exchanges. District websites also provided information about what is available to support the common core. The time is right to gather information and to respond with support. My years as a teacher, staff developer, administrator, and university faculty have allowed me to talk with teachers and be in classrooms

nationwide. This is the time to make known what the education system has allowed me to learn through many years of service.

### **Special Chapter for Brainiacs**

I cannot forget Chapter 9, which was developed for the brainiacs and their inquisitive nature. While many readers do not want to be bogged down with some of the intricacies of how the brain functions, there are others who long for more detail. Chapter 9 is the chapter for descriptions and definitions, answers to brain questions, and some current findings that have classroom implications. The inquisitive reader is sent to Chapter 9 in prior chapters, when the details are unnecessary for the purpose of this book but are too interesting to leave out. This information is plucked out and made available in the chapter that culminates this book.

It is a match! Common core expectations and understanding neurology make sense. This is the time for brain science to really impact what is happening in the classroom. Teachers are admonished to make good decisions for the time and energy spent by their students. There is precious little time during the school day to prepare our nation's children capably for the world. If teachers understand what happens when children learn at any grade level and at any level of intensity, teaching practices will improve. It is a powerful time to be a teacher, and a pivotal time to be the recipient of a world-class education through the common core.

Note: Chapter-by-chapter questions for book study groups are available at [pamelanevills.com](http://pamelanevills.com).