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**CLERESTORY LEARNING**  
Investing in teachers,  
our schools' most valuable asset



“A teacher  
affects eternity;  
he can never  
tell where his  
influence stops.”

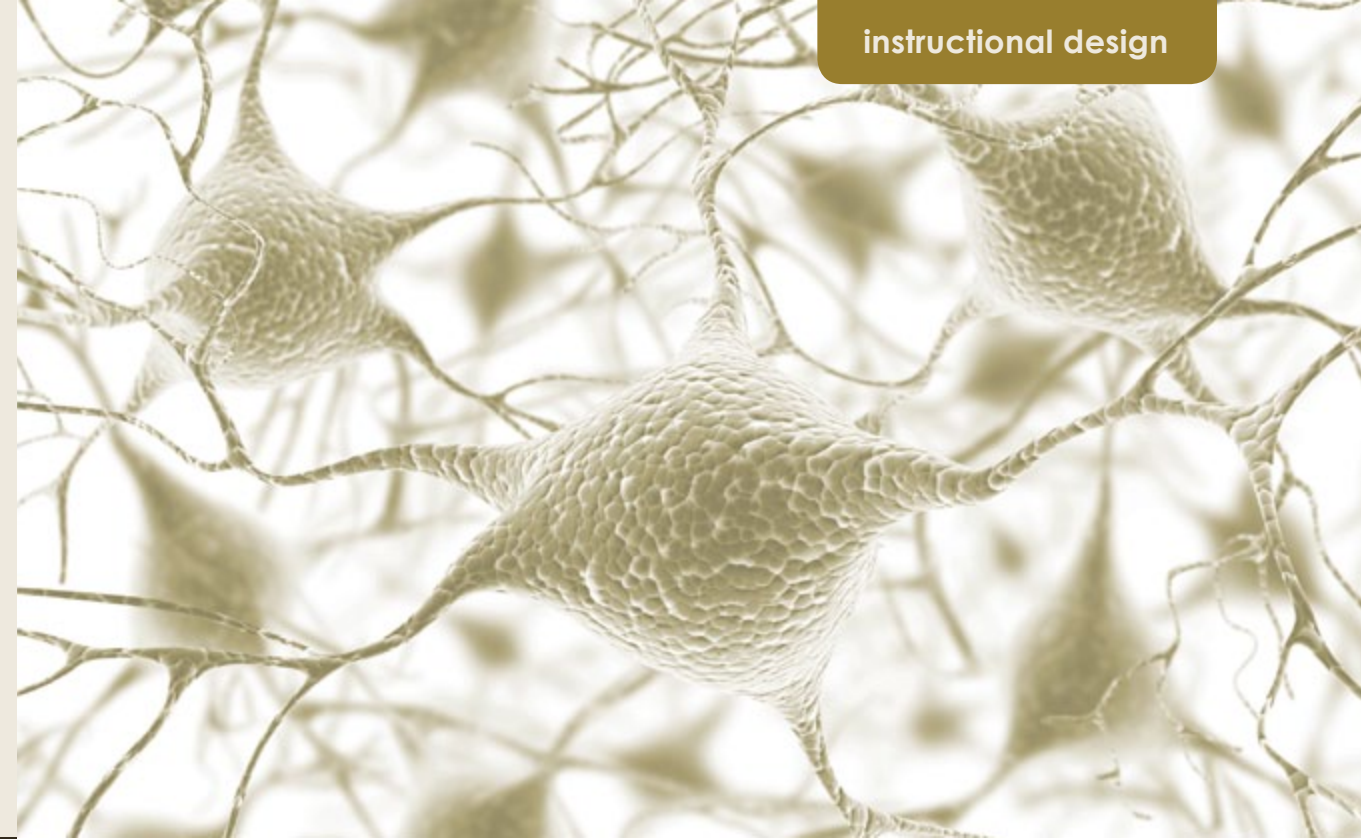
Henry Brooks Adams, American Writer (1838-1918)

**By investing in teachers**, Clerestory Learning equips and empowers those who make teaching the world's most influential profession. We create professional development events and instructional programs that apply current neurocognitive research to teaching. We help teachers and schools produce lasting, relevant, beyond-the-classroom learning.

And, rest assured, Clerestory Learning is not a hit-and-run-type service. We are available for program follow-up and stay in touch through social media tools and electronic means, much like our current generation of students. Consider us a teacher's supply line that fuels motivation and provides tools for ever-widening influence.

“40–60 percent of students are ‘chronically disengaged’ from school.”

Lantieri, L., “Cultivating Emotional Intelligence: Implementing Social-Emotional Learning in K-12 Education,”  
Learning and the Brain: Using Brain Research to Raise IQ and Achievement  
San Francisco, February 17–20, 2010



Today’s students thrive on interaction and immediate feedback. They desire to connect with others, whether across the room or around the world, because these connections represent access to information and expertise. Much of traditional classroom learning is no longer optimized for today’s students.

**How can teachers engage students in ways that capitalize on their ability to gather information, use it to fuel inquiry, and produce growth and solutions for today’s world?**

It all depends on learning. When we understand how learning occurs, we can develop instruction that equips students to learn well (know what), respond wisely (know how), and contribute meaningfully (think critically and creatively).

This kind of instruction requires a tested, rubber-meets-the-road strategy; something that is solidly researched, accessible for any educator, and proven reliable. We call it, the **ARCHITECTURE OF LEARNING**.

### The Architecture of Learning Instructional Design Model

Years of researching neuroscience, cognitive science, and psychology convinced us the key to designing effective teaching is understanding how people learn. So, we developed the **Architecture of Learning** instructional design model. Simply stated, it’s a blueprint that incorporates the core processes of learning and patterns instruction accordingly: *Experience provides us with new information. As we organize that new information, we gain new knowledge. As we recognize patterns in that new information and compare them with our reference points of past experiences, we construct new understanding. When we see the usefulness of this new understanding through practice, we can apply new learning in contexts beyond the classroom.*

Instructional integrity results when teachers use blueprints to strategically plan learning based on the type of material being taught. This is instruction that engages today’s students—students “get” the value of the new material because the point of reference is relevant; they grasp new information because they recognize patterns from previous experiences; they respond to modeled examples of its use in a “safe” environment and begin to understand its importance and implications; and eventually they can flourish in a world where they create applications of new learning.

## THE ARCHITECTURE OF LEARNING PROGRAM

### >> THE BOOK

#### **The Architecture of Learning: Designing Instruction for the Learning Brain**

by Kevin D. Washburn, Ed.D.

9780984345908 | \$18.95 | Clerestory Press, January 2010  
Available from [clerestorypress.clerestorylearning.com](http://clerestorypress.clerestorylearning.com) or a favorite online retailer.

This recent book release provides an overview of the Architecture of Learning design model, its various blueprint types and applications, its utility for developing balanced assessment, and its incorporation of critical and creative thinking. Become an architect of learning and develop chronically *engaged* students.

*"...Washburn helps instructors understand the prerequisites for making practice successful (often neglected!), and what they need to do to make it useful outside of educational settings (rarely accomplished!)..."—Amazon Review*

### >> THE COURSES

#### **Architecture of Learning: Basic Course (3 days)**

Whether it's the Medieval Era, human body systems, or throwing a ball, instruction designed using Architecture of Learning and its principles produces lasting learning. The **Architecture of Learning Basic Course** breaks down the processes of learning, explains blueprints in detail, shows how assessment can be properly aligned with teaching and learning, and most importantly, enables teachers to experience the learning they will model in their classrooms.

This three-day, interactive course recommends participants read a portion of **The Architecture of Learning: Designing Instruction for the Learning** in advance so course instruction can be devoted to deep understanding of blueprint design, coaching, and unit development. The basic course is recommended for school leadership and K-12 educators of all content areas, and graduate credit through a fully accredited institution is available for all interested participants.

*Completion of the Basic Course qualifies each participant to implement Architecture of Learning in his currently-employing organization and is a prerequisite to participate in the Architecture of Learning Advanced Course.*

#### **Architecture of Learning: Advanced Course (2 days)**

This two-day course equips certified users of the Architecture of Learning program to lead the Architecture of Learning Basic Course in-house. Participants experience in-depth review of program principles, an update of current research implications, and extensive practice and coaching for program implementation.

*Completion of the Advanced Course qualifies each participant to lead the Architecture of Learning Basic Course in his currently-employing organization.*

### >> THE REFRESHER

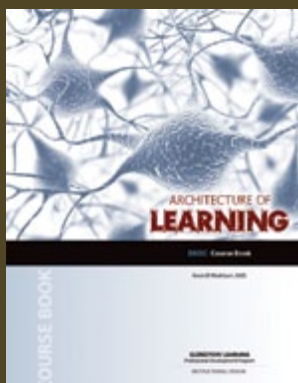
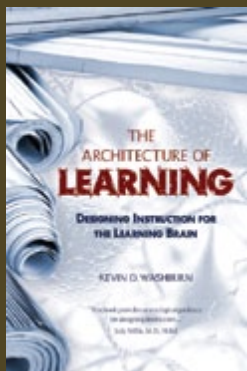
#### **Architecture of Learning: A Refresher (1 day)**

Have you ever purchased a new gadget, taken a few lessons, enjoyed its benefits, but after using it for a while found you could use some more time with an instructor to achieve its potential?

The **Architecture of Learning Refresher** is a one-day event recommended for participants having completed the Basic Course and implemented **Architecture of Learning** for at least one year. It provides an update of related research and its application, addresses blueprint application questions for specific content areas, as well as school assessment and instruction/mission alignment.

Architecture of Learning helps teachers connect with students. This model—this pattern of thinking—makes sense because it's the way the brain learns. It requires strategic interaction with information, and intentionally incorporates feedback. Now that's a language today's students understand.

[http://clerestorylearning.com/architecture\\_of\\_learning.html](http://clerestorylearning.com/architecture_of_learning.html)



“When something  
can be read without  
effort, great effort  
has gone into  
its writing.”

Enrique Jardiel Poncela

Have you ever been moved by insightful song lyrics, inspired by the subject of an uplifting biography, transported to a fictional setting for several delightful hours, or experienced an “aha” moment triggered by a narrated documentary? We are all beneficiaries of well-written works.

### **How can we equip students to create such masterpieces?**

First, we can help them recognize that what is initially written is merely raw material, but raw material with great potential. Second, we can teach them to recognize and use revision skills to craft that raw material into beautiful and meaningful writing. We call that transformative communication, the heart of WRITER’S STYLUS.

## **The WRITER’S STYLUS INSTRUCTIONAL WRITING PROGRAM**

### **Transforming Substance Into Significance**

Focused attention on revision is a hallmark of the Writer’s Stylus writing program. While traditional writing training often advocates a multi-step “writing process,” it frequently lacks specific strategies to help students produce creative, compelling, and convincing writing.

When knowing what and how to revise becomes a major instructional emphasis, other components gain meaning and importance. For example, grammar is no longer an end in itself but is a doorway to revision; when a student understands adverbs, she can find them, eliminate them when possible, and then replace them with stronger verbs. This grammar-to-revision approach equips students with the know-how of good writing.



### Writer's Stylus: Basic Course (5 days)

The Writer's Stylus Basic Course is a highly interactive, 5-day professional development event for school leaders and K-12 teachers of all academic disciplines. Participants undergo a transformation, both personally and professionally, as they experience the teaching methods they will use with students.

Participants begin each day with **Acquaintance and Analysis**, a time where they are exposed to exemplary writing and challenged to identify what authors do to communicate effectively and powerfully.

Early in the event, all participants are given a writing assignment, because the only way to learn how to write well, is to write. (This is frequently referred to as **Writing on Demand**.)

At various points throughout the course, participants receive **Direct Instruction** that explains and demonstrates practices that can improve their writing. This component includes a focused look at revision skill checklists with an explanation of how **Mechanics** instruction provides students with the grammatical knowledge required to master revision skills.

Soon, participants experience a **Coaching** segment where interaction is personalized and each blossoming writer becomes empowered to achieve at the highest levels.

And finally, in one of the most moving experiences of the week, participants celebrate their learning; several eager writers read their crafted compositions to the group. These improved essays reveal stunning growth, and teachers recognize how effective the instruction they've received can be in developing young writers.

Just as we witness greater confidence and well-crafted essays during the course, classroom instruction that combines these five methods, along with a Writer's Stylus assessment component that establishes high standards and guides students to maximum levels of achievement, not only helps students learn to write, but transforms them into writers who express their ideas with clarity, power, and authenticity.

“When you write  
EXPLODE – FLY APART – DISINTEGRATE!  
Then give time enough to think,  
cut, rework, and rewrite.”

Ray Bradbury

Students who study published works of writing, experience revision skills through direct instruction and modeling, practice with customized text, and finally interact with a caring coach-teacher while continuing to revise, develop into influential communicators. We call it the Writer's Stylus transformation.

Not only do students become transformed writers, they “learn to be good learners.”<sup>1</sup>

Research tells us that writing engages “more areas of the brain and involves them more intensely than any activity thus far investigated.”<sup>2</sup> Writing “exacts—from those...who want to do it well—precision, discernment, fineness of observation, and detachment. By its nature, true writing practices critical thinking...Good, sustained critical thinking underlies good, clear thinking: you could almost say that good writing is critical thinking. It is critical thinking resolved and put down on paper.”<sup>3</sup>

That sounds like a recipe for creating a masterpiece, both in writing and in life.

[http://clerestorylearning.com/writers\\_stylus.html](http://clerestorylearning.com/writers_stylus.html)

1. Houston, G., *How Writing Works: Imposing Organizational Structure Within the Writing Process* (Upper Saddle River, NJ: Allyn & Bacon, 2004), 217.  
2. Houston, 8.  
3. Tredinnick, M., *Writing Well: The Essential Guide* (New York: Cambridge University Press, 2008), 9.



## TEACHING the LEARNING BRAIN

Four 90-minute parts presented during a one-day In-Service

### Teaching the Learning Brain, Part 1: Getting to the Core

The road from teaching to learning winds through the learner's head, a world of neuronal pathways and memory-making activity. When the brain engages in learning, how does it process incoming data? This opening session highlights the cognitive processes that convert sensory data to knowledge, understanding, and utility.

### Teaching the Learning Brain, Part 2: Engaging Minds to Foster Learning

Understanding learning enables effective teaching. What instructional methods engage the cognitive activity that leads to learning? This second session identifies research-supported methods, their connection to learning's core processes, and potential sequences for effective teaching.

### Teaching the Learning Brain, Part 3: Exploring a Few Influences

Even the best designed teaching can be influenced by a learner's perspectives on intelligence and challenge. How do belief, effort, achievement, and confidence influence each other and impact the learner? This third session examines new research on how teachers can make these significant influences a benefit rather than a detriment to student learning.

### Teaching the Learning Brain, Part 4: Motivating Students, Ignoring Marshmallows

The learner's state affects learning, and executive function capacity influences the learner's thinking. How and when do we motivate students? Why do young brains sometimes seem to lack common sense? This final session explores details of extrinsic and intrinsic motivation, the development of executive function and its influence on student thought and actions, and the major role self-regulation plays in academic and professional success.

### In-Service (1 day)

Our passion is to stay informed of current research, synthesize it, then share our findings and implications to empower teachers, and ultimately impact education for good. While our experience tells us this is most effectively accomplished through a multiple-day professional development event where relationships can take root and deeper understandings form, we occasionally respond to urgent requests for a one-day In-Service event. We currently offer a one-day, six-hour in-service entitled **Teaching the Learning Brain**.

An E-mail from a Middle School Science Teacher to her Principal, October 2010. Used by permission.

*"Thanks for making [Teaching the Learning Brain] possible. I loved the opportunity and have found that it has already made a difference in my practice in the classroom.*

*One result for me is a renewed commitment to focus my curriculum decisions on deep and narrow content rather than wide and shallow. I have found that if you're racing to "cover" the book rather than uncover important truths and help kids make meaningful connections, you don't have the amount of time necessary to do it well.*

*Teaching the Learning Brain helped me to understand more deeply why it's critical to help kids do the hard work of deep thinking and connecting. My new line with my kids is, "The one doing the thinking is the one doing the learning."*

## Learning? Diving Required!

Taken from **The Window**, A Clerestory Learning Blog

If you've ever swum in a hotel swimming pool, you've likely seen the sign: "No diving! Water depth is too shallow." The pool is not deep enough to allow safe diving, and the fear, of course, is that the hotel will be sued if swimmers injure themselves by diving head-first into the pool.

It is probably a good policy for hotels, but not for constructing lasting learning. According to memory researchers, depth of processing increases retention. Why? Because deep processing "allows a richer and more elaborate code, which in turn becomes more readily available."<sup>1</sup> This idea is not a new one. In 1890, William James wrote: "The one who thinks over his experiences most, and weaves them into systematic relations with each other will be the one with the best memory."<sup>2</sup>

The message: to make learning memorable, engage students in deep thinking about new material. But what constitutes deep thinking in new learning? Research suggests two mental activities: comprehension and elaboration.

Comprehension involves organizing new data. "During comprehension, the brain sorts, labels, and organizes the raw sensory data."<sup>3</sup> As teachers, we often organize material as we prepare to present it to students. However, the research claims that the students must label and sort new material themselves to increase the likelihood of retaining it. Even if students replicate the teacher's organization of the material, the act of sorting and labeling the data themselves contributes to learning. Learning is somewhat like medicine. If the teacher takes the medicine, it does the student little good. But when the student takes the medicine, when the student thinks deeply about new material, the medicine can work as intended.

So, what does comprehension look like in the classroom? Students manipulating representations of ideas into structured schemes, such as tables, sequences, hierarchies, or even stories. For example, after explaining and modeling the steps involved in eliminating unneeded or ineffective modifiers from writing, a teacher may have the students develop flow charts to illustrate and sequence the steps.

Naturally, the teacher presents and models the steps in their correct order, but having the students sequence the steps engages them in one aspect of the deep processing that promotes retention and recall.

This is also true of deep thinking's second mental activity, elaboration. Elaboration "involves linking the material being rehearsed to other material in memory."<sup>4</sup> The term conceptual blending aptly describes elaboration. "The brain receives and sorts sensory data causing patterns to emerge. The patterns direct the brain to search its long-term memory stores for previous experiences that illustrate similar patterns...Once recalled, the previous experience provides a reference point for further thinking about the newly received data."<sup>5</sup> Understanding develops as a student recognizes relevant connections between the reference point and the new data, and "blends" these ideas.

What does elaboration look like in the classroom? "Increasing the variety of ways the brain processes information (e.g., both verbal and nonverbal) increases connections between new and known information."<sup>6</sup> Learners deepen their understanding of new information by representing it in varied forms." Howard Gardner's multiple intelligences offers a way to vary the ways students interact with material. For example, during an earth science unit, a teacher may challenge students to find or create music that illustrates volcanic eruption or create personified accounts in which a volcano shares its goals, fears, and strengths as it prepares to erupt. "Note what such tasks require of the learner. Significant connections between the new material [e.g., volcanic eruption] and a nonverbal reference point [e.g., music] must be explored." Such exploration engages learners in deep processing of the new material. "The resulting connections, which stem from the student's life experience, create a conceptual network that gives him greater flexibility in thinking."<sup>7</sup>

Unlike a shallow swimming pool, when it comes to learning, diving deep is good for one's head!

### Stay Connected

We believe we must keep growing if we want to offer educators and students our best. So, we've set up avenues to share our new learning. We share current research, and keep you posted on latest developments and opportunities. We thrive on conversation, so we invite you to connect with us in as many ways as you'd like. Let's grow together. Who knows when our ever-widening circles of influence may converge?



**Twitter: kdwashburn** >> <http://twitter.com/kdwashburn>



**The Spectrum: Clerestory Learning E-News** >> <http://thespectrum.clerestorylearning.com>



**The Window: A Clerestory Learning Blog** >> <http://clerestorylearning.blogspot.com>

**Facebook: Clerestory Learning** >>

<http://www.facebook.com/#!/pages/Clerestory-Learning/109342269089382>



**LinkedIn: Kevin D. Washburn** >> <http://www.linkedin.com/in/kevindwashburn>

#### References for **Learning? Diving Required!**

1. Baddeley, A., Eysenck, M.W., & Anderson, M.C., *Memory* (New York: Psychology Press, 2009) 102.
2. Ibid. quoted on p. 102.
3. Washburn, K.D., *The Architecture of Learning: Designing Instruction for the Learning Brain* (Pelham, AL: Clerestory Press, 2010) 8.
4. Baddeley, 103.
5. Washburn, 14.
6. deWinstanley, P. A., & Bjork, R. A., "Successful Lecturing: Presenting Information in Ways that Engage Effective Processing," in Halpern, D. F., & Hake, M. D. (Eds.), *Applying the Science of Learning to University and Beyond*, vol. 89 (San Francisco: Jossey-Bass, 2002).
7. Washburn, 21.

## CLERESTORY LEARNING

Clerestory Learning is a division of Clerestory Learning/Make Way for Books, LLC.

### OUR VISION

Clerestory Learning is a service dedicated to creating practical classroom applications of neurocognitive research by designing programs and professional development for teachers, our schools' most valuable asset.

Make Way for Books is a service dedicated to being a reliable source of quality children's literature by maintaining selection standards to foster discerning readers.

Collectively, Clerestory Learning/Make Way for Books envisions a future of wise leaders that can think strategically and articulate sound reasoning to influence a world authentically and with integrity.

### OUR MISSION

Clerestory Learning illuminates the minds of educators and students, helping them develop understanding through meaningful well-articulated programs. Clerestory Learning maintains excellence in professional development and training programs by creating effective instructional solutions based on sound applications of multidisciplinary research. We keep growing because we want to offer educators and students our best.

Make Way for Books fosters a love of reading by recommending and selling a quality selection of children's books, maintaining consistent recommendation standards and staying abreast of in-print and newly released children's titles. Make Way for Books strives to influence young readers, educators, book publishers, and distributors by maintaining accessibility to a quality literature selection and by pursuing avenues of effective distribution and fulfillment.

Collaboratively, Clerestory Learning/Make Way for Books comprehensively touches the youngest minds, equips those who shape learning, and invests in those who offer services to support these endeavors.

Clerestory Learning [clerestorylearning.com](http://clerestorylearning.com)

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