

Energize Your Training: Using Brain Research to Enhance Your Learning Events (Session Handouts)

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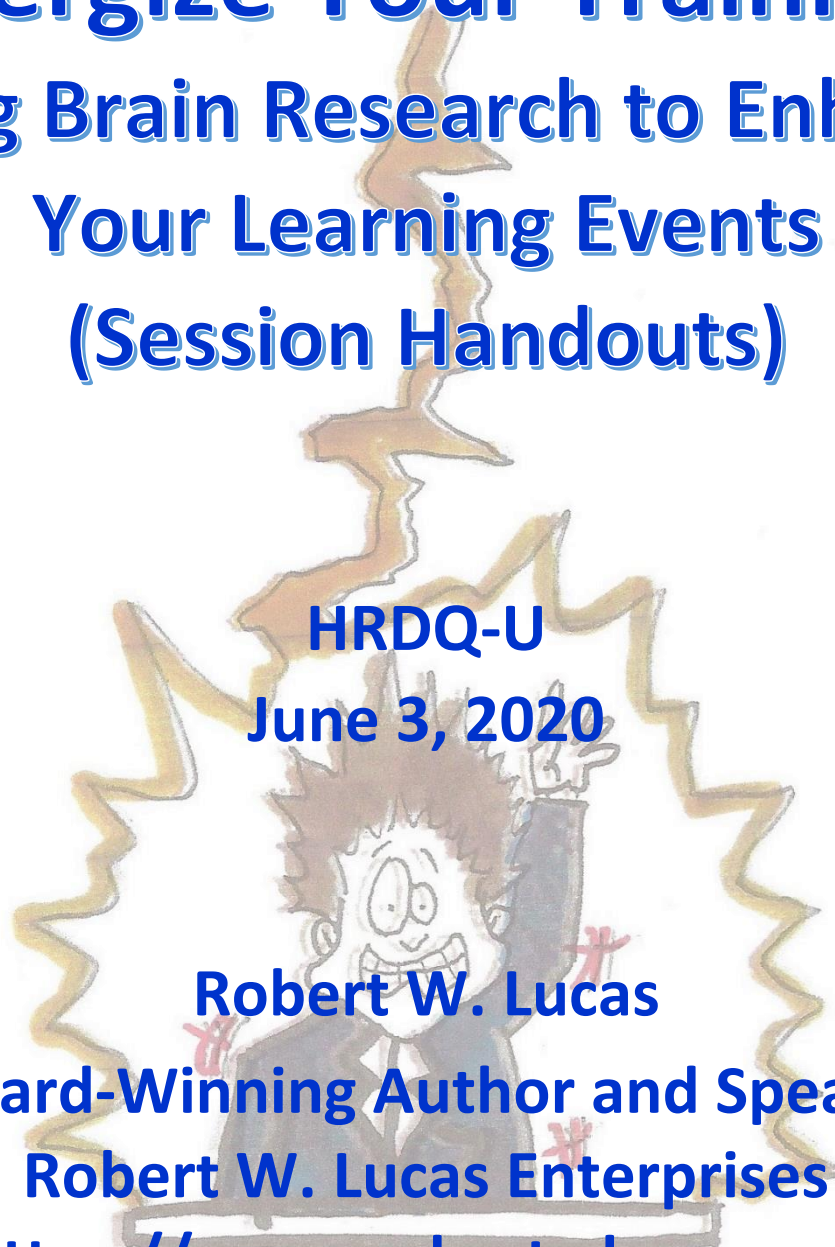
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Robert W. Lucas

Award-Winning Author and Speaker

Robert W. Lucas Enterprises

<https://www.robertwlucas.com>



ABOUT YOUR FACILITATOR

Robert W. Lucas is an internationally known award-winning author and book publisher who has lived, traveled and worked in over seventy different countries and geographic areas. He has been listed in *Who's Who in the World*, *Who's Who in America* and *Who's Who in the South & Southeast* multiple times.

Bob is also a learning and performance expert who specializes in workplace performance-based training and consulting services. Bob has nearly five decades of experience in human resource development, management, and customer service. He was the 1995 and 2011 President of the Central Florida Chapter of the Association for Talent Development (CF-ATD). Bob was also of the first recipients in the world of the ATD designation as a Certified Professional in Learning and Performance when the program started in 2006.

In addition to having the top-selling customer service textbook in the United States for almost two decades, Bob has written and contributed to thirty-eight additional books and compilations. During his career and as an internal and external consultant, he has shared his knowledge with workplace professionals from organizations such as AAA, NASA, Walt Disney World, SeaWorld, Martin Marietta, SunTrust Bank, and various branches of the military. Examples of topics that Bob has written and trained on include customer service, presentation skills, creative training, management program development, train-the-trainer, interpersonal communication, adult learning, diversity, team building, and employee and organizational development. Bob regularly gives presentations to various local and national groups and organizations.

Partial List of Bob's Publications:

- The Creative Training Idea Book: Inspired Tips & Techniques for Engaging and Effective Learning
- The BIG Book of Flip Charts
- Energize Your Training: Creative Techniques to Engage Learners
- Training Workshop Essentials: Designing, Developing and Delivering Learning Events That Get Results
- Creative Learning: Activities and Games That REALLY Engage People
- The Complete Guide to Ocean Cruising: Everything You Need to Know for a Great Vacation
- The Survivor's Family Guide: A Resource for Loved Ones After Your Passing
- Make Money Writing Books: Proven Profit-Making Strategies for Authors
- 231 Ways to Say I Love You...and Mean It
- Please Every Customer: Delivering Stellar Customer Service across Cultures
- Customer Service Skills for Success
- People Strategies for Trainers: 176 Tips & Techniques for Dealing with Difficult Classroom Situations
- How to be a Great Call Center Representative
- Customer Service Skills & Concepts for Success
- Customer Service: Building Successful Skills for the 21st Century
- Job Strategies for New Employees
- Communicating One-to-One: Making the Most of Interpersonal Relationships
- Coaching Skills: A Guide for Supervisors
- Effective Interpersonal Relationships
- Training Skills for Supervisors
- Customer Service: Skills and Concepts for Business

Additionally, Bob has been a contributing author for the *Annual: Developing Human Resources* series by Wiley/Pfeiffer & Company since 1992, and several compilations by various publishers.

Bob earned a Bachelor of Science degree in Law Enforcement from the University of Maryland, an M.A. degree with a focus in Human Resources Development from George Mason University in Fairfax, Virginia, and a second M.A. degree in Management and Leadership from Webster University in Orlando, Florida.

LEARNING OBJECTIVES

Before beginning the webinar, please take a few moments to read over the learning objectives for the session so you will have an idea of what to expect.

At the end of this webinar and when applying what is learned, participants will be able to:

- 1. Develop and deliver learning events that actively engage and stimulate your participants.**
- 2. Deliver training using brain research on how to activate brain neurons and reinforce memory.**
- 3. Transfer some of the techniques and strategies encountered to your own learning events so that participants are better able to gain, retain, recall and use what they learn.**
- 4. Create an enjoyable environment in which participants play an active role in their learning.**
- 5. Identify research and resources from which you can gather additional information and materials that will make your training initiatives more effective.**
- 6. Add a bit of sizzle and excitement to their learning events.**

BRAIN-BASED LEARNING

Brain-Based Learning is a theory that incorporates research on the human brain, its implications on education and training, and creative strategies to enhance acquisition, retention and recall of information.

NOTES:

THREE FACTORS THAT IMPACT LEARNING

1. PRECONCEIVED IDEAS/PARADIGMS

Perceptions or beliefs that a trainer and learners bring about training or a training topic can influence the effectiveness of the learning experience. If they believe something will or will not work, those perceptions can inhibit or derail learning effectiveness. They can also place limits of what might be offered by a trainer or accepted by learners.

OPTICAL ILLUSION ACTIVITY: What did you see?

Image# 1 _____

Image# 2 _____

Image# 3 _____

NOTES:

THREE FACTORS THAT IMPACT LEARNING (Cont.)

2. ATTENTION SPAN

The human body is a stimulus gathering machine. Through the five senses it continually gathers information through millions of nerve endings and transmits that data to the brain for processing.

At any given time, you are taking in sights, sounds, smells, tastes and tactile messages.

All of these are competing for priority or attention and are filtered.

However, only about 1% of the sensory signals reach the brain for processing and possible memory formation.

Sensory Prioritization

- **Unique** – the information or experience provided is without equal or delivered in a manner that sets it apart from previous or similar experiences.
- **New** – training content is based on current research or is new or never experienced before by participants.
- **Unexpected** – an action, event or occurrence that is sudden, abrupt, unforeseen, or not anticipated.

When one or more of these things happen, people often react and focus attention on the source.

NOTES:

Attention Getters

Some possible examples of ways for gaining attention and refocusing your learners that you can research further include the introduction of brain-based instructional elements like:

- Sounds/Music
- Lighting changes
- Color
- Aromas/Fragrances
- Instructor movement/Motion
- Novelty/Fun
- Hydration/Nutrition
- Plants
- Learner engagement (individual and group activities - movement)

NOTES:

Movement/Motion

Movement or motion is a great way to engage learners and gain or refocus attention. By actively engaging participants, you engage various portions of the body and brain simultaneously.

In his insightful book *Brain Rules* (see *Brain-Based Learning Resources*), molecular biologist John Medina provided 12 principles for surviving and thriving at work, home and learning environments. Some of the more important for the learning brain is that movement and exercise improves attention, long-term memory, reasoning, and problem-solving.

Through movement and activity blood flow increases and carries oxygen, which is crucial for fueling brain cells (or neurons) and increasing brain functioning.

By physically engaging learners, you can help create a situation in which their attention is refocused and the blood supply to their brain is increased.

NOTES:

THREE FACTORS THAT IMPACT LEARNING (Cont.)

3. LEARNING PREFERENCES (MODALITIES)

Each of your participants come to training with one or more preferred learning preference or commonly called modalities. These are the sensory pathways through which they best *gain, retain, recall and ultimately use* what they experience in training.

According to research on percentages of learners with each modality, summarized by Laurie Ellen Materna in her book [Jump-Start the Adult Learner: How to Engage and Motivate Adults Using Brain-Compatible Strategies](#):

40-65 % are visually dominant

25-30 % are auditory

5-15 % are kinesthetic-tactile.

Most people have a primary and secondary style preference.

As a trainer, you should be aware of your preferred modality(ies) because people tend to gravitate toward their own comfort zones. For example, if you are primarily a visual learner, you will likely include a lot of visual aids or information during learning events that you design and deliver. Doing so fails to address the needs of auditory and kinesthetic-tactile learners.

****If you are unsure of your preferred modality(ies) do a quick assessment with the questionnaire included in the *Brain-Based Learning Resources* section of this handout. You can also use this to assess the needs of your learners, if you leave the attribution included at the end of the survey.**

In an ideal session, you will address the needs of all three preferred modalities so that everyone has an opportunity to learn in a manner that works best for them. Doing this helps each learner maximize their learning potential.

In some instances, people have adapted their learning preference(s) due to a personal need (e.g. ability issue such as hearing or sight loss, dyslexia, lack of mobility, or other reason). Failure to provide equal opportunities in your training is not only frustrating and not effective, it is also in violation of the American's with Disabilities Act.

NOTES:

Training Strategies to Address Modalities

Here are some strategies related to the three prominent adult learning modalities:

- **Visual** (Seeing) - Add color through use of the following techniques in your learning environments:
 - Charts
 - Colored handouts
 - Colorful markers
 - Diagrams
 - Pictures
 - Posters
 - Slides
- **Auditory** (Hearing) - Include sound in your session using the following:
 - Music
 - Varied voice tone, inflection, pitch and volume
 - Audio-based training aids (video, webinars, recorded messages)
 - Activities (discussions, brainstorming, role-play, presentations/teach-backs)
 - Stories/Anecdotes
- **Kinesthetic-Tactile** (Touching/Physical movement) - Encourage participation and interaction in physical activities such as, icebreakers, games, simulations, role play, small group discussions, team building activities and other events where learners become active participants in the learning process and they learn from one another as well as the trainer.
 - Physical activities/movement
 - Ice breakers
 - Games
 - Simulations
 - Role-play
 - Small Group activities
 - Team-building activities

MAKING MEMORIES

Depending on the study you read, the average adult attention span is between 10-18 minutes. To address this issue, you should periodically introduce changes throughout your session (e.g. sounds, movement, images, activities, music, video, and other strategies to attract and engage learners).

The ability to focus for long periods impacts your participants' ability to gain, retain, recall, and ultimately use what you share with them.

SHORT-TERM MEMORY

Memory experts have found that people best retain information that you provide in smaller “chunks” or segments of information.

As trainers, this is an important concept because researchers have found that the human brain can only effectively retain about 7 bits of information, plus or minus 2 in their short-term memory. (Source = Psychologist George Miller – classic study in 1956). Miller's paper on this study suggested people can retain 5-9 pieces of information (7 is the mean number).

CHUNKING

Chunking is a cognitive strategy in which you break complex and lengthy information into smaller more digestible pieces. This prevents the brain from being overloaded or overwhelmed.

By breaking information into small units, the brain can quickly grasp and hold them into short term (working memory). Once there, the brain processes what it received through the senses, compares to memorized information, and decides whether to move it to long-term memory and assimilate or discard it.

When chunking information in your training sessions, you can aid learners in identifying patterns as well as, better grouping and organizing what they received.

Information Chunking Strategy

Instead of this...

Shopping List

Avocado
Milk
Bananas
Peas
Cherries
Green Beans
Yogurt
Lettuce
Corn on cob
Butter
Strawberries
Mushrooms
Blueberries
Tomato sauce
Tomato paste
Stewed tomatoes

NOTES:

Try this...

Shopping List by Categories

Vegetables

Avocado
Green Beans
Lettuce
Corn on cob

Dairy

Milk
Butter
Yogurt

Canned Goods

Mushrooms
Peas
Tomato sauce
Tomato paste
Stewed tomatoes

THE RULE OF 3s

Related to Miller's research, information with more than seven items (plus or minus two) tends to blur people's ability to grasp and retain information that you provide.

One way to use the chunking technique is to apply what is known as the Rule of 3s.

The process of putting individual pieces of information into three segments or categories to facilitate memory.

Notice that in some cases the examples shown below have more than 7 elements, plus or minus 2, but they are also chunked into segments of three or less units. This follows the Rule of 3s.

Real-World Examples of the Rule of 3s

Social Security numbers	= 000-00-0000
Phone numbers	= (000) 000-0000
Birthdates	= 10-25-2000
Presentations	= Intro, Body, Conclusion
Impromptu Presentation	
Formats	= Past, Present, Future
	= Past, Present, Future
	= Problem, Solution, Results
	= First, Second, Third

Book Titles/Movies/TV shows

To make it easier for viewers to remember key characters in books, movies and television shows, the number of stars are usually kept within the boundaries of memory.

- Snow White and the Seven Dwarfs
- The Brady Bunch = Mom and Dad Brady, and six kids
- Gilligan's Island = Gilligan, Skipper, Professor, Mr. & Mrs. Howell, Ginger, and Mary Ann
- The Three Musketeers
- The Three Little Pigs

Your Experience- Rule of 3s in This Webinar

Without realizing it, you have experienced the Rule of 3s throughout this session.

We have explored:

-3 Factors Affecting Learning

- Pre-conceived Idea
- Attention Span
- Learning Modalities

-3 Optical Illusion Images

-3 Ways that the brain processes information through Sensory Prioritization

- Unique
- New
- Unexpected

-3 Learning Preferences/Modalities

- Visual
- Auditory
- Kinesthetic-Tactile

ADDITIONAL NOTES PAGE

During the webinar jot down ideas you get for applying what is learned and topics you want to research further...

BONUS CONTENT (Not Covered in Webinar)

MEMORY CRITERIA

Since early studies on memory, educational researchers have discovered that there are two criteria in the classroom that influence items stored in short-term memory and later transferred to long-term memory – these criteria are *sense and meaning* (see David Sousa in *Brain-Based Learning Resources*).

This means that the content must be understood and be logical for learners. It must also add value or have meaning to them. In other words, they need to see how it is worth their time to learn and can be applied later.

An important element of a successful training design is to build in multiple opportunities for participants to process information and understand it. Additionally, there must be points where they get to think about ways to apply the concepts in the workplace or real-world. A good way to accomplish the latter is to build in activities in which small groups brainstorm and discuss potential application.

To accomplish this, build in plenty of time before, during, and after training for learners to receive and process information before moving on. This ties into the concept of spaced learning which aids the brain in better gaining, retaining, recalling, and using what it experiences.

Possible strategies to help processing in class or online, include engaging participants during training. Four strategies that you can use to have participants periodically pause to think about and explore what they have learned include:

Journaling – process where participants can pause to process content experienced. They can then write ideas of how they can apply what they learned in their personal and professional lives. This can be done in class and before or afterward. You might provide content for them to think about before they join the training session. Afterwards, you might also have them develop and write down strategies for implementation.

Small group activities – points in your session where participants can discuss ideas and content shared on session content (e.g. pros/cons, applications, or whatever you want them to extrapolate from what was shared).

Brainstorming/online chats - sharing ideas on ways to apply ideas or concepts in a variety of environments or situations.

Interim Reviews – periodic pauses where learners must think about what was learned either by going through their notes or recalling from memory.

These can be in a fun format:

- **Wordsearch puzzles** based on key session terms or concepts.
- **Group shouts outs** where participants call out (or write) responses that come to mind as the facilitator asks questions related to session content.
- **Balloon reviews** (strips of paper with concepts in colorful balloons taped to walls) in which concepts or terms are revealed as volunteers retrieve and pop the balloons. They then to share their concept/term while volunteers who think they can explain/define the term provide descriptions or definitions and are rewarded with candy or small session content related prizes.
- **Walk arounds** where learners get up and move from one flip chart sheet to another on walls to answer posted questions or contribute ideas.

Such techniques will help learners make mental connections and better master content while actively engaging and causing them to recall concepts learned. This approach also aids retention.

In participating in these types of activities, participants can enhance personal comprehension and better grasp the meaning. They also increase the potential for making sense of what they experience while providing opportunities for thinking of session application following training.

NOTES:

LEARNING MODALITY SELF-ASSESSMENT

Take a few minutes to read each of the following statements.

In the Preferred Behavior column, place a check (✓) in the space by each statement that is most like you.

Once you have selected all statements, look at the instructions at the end of the survey in order to determine your preferred style(s).

Style Category	Preferred Behavior
_____ 1.	_____ Like to touch or handle things when looking at them
_____ 2.	_____ Spell well
_____ 3.	_____ Like to listen to books on tape
_____ 4.	_____ Enjoy reading books
_____ 5.	_____ Verbal directions alone confuse me
_____ 6.	_____ Enjoy background music while working on a project or an activity
_____ 7.	_____ Would rather spend time discussing a topic than reading about it
_____ 8.	_____ Prefer to use of colors and colored paper on handouts
_____ 9.	_____ Enjoy writing
_____ 10.	_____ Often talk to myself
_____ 11.	_____ Like working with my hands
_____ 12.	_____ Good athlete
_____ 13.	_____ Enjoy jigsaw puzzles
_____ 14.	_____ Have a lot of nervous energy (e.g. manipulating objects or change in pockets, tapping pencils, etc.)
_____ 15.	_____ Remember jokes, stories and conversations
_____ 16.	_____ Collect things
_____ 17.	_____ Comprehend information better if reading aloud
_____ 18.	_____ Can read maps well
_____ 19.	_____ Doodle or draw pictures
_____ 20.	_____ Use finger as pointer when reading
_____ 21.	_____ Like games, role plays and simulation activities
_____ 22.	_____ Use rhymes and jingles to remember things
_____ 23.	_____ Get meaning from someone's body language and facial expressions
_____ 24.	_____ Good at locating things or places
_____ 25.	_____ Take a lot of notes during a lecture
_____ 26.	_____ Interpret and understand graphs and diagrams well
_____ 27.	_____ Follow written instructions well
_____ 28.	_____ Talk rapidly and use hands to communicate
_____ 29.	_____ Like to take things apart and put them together
_____ 30.	_____ Enjoy talking to others on the telephone

TOTAL #1 A _____ V _____ K _____

After rating all statements, go back and place an A (Auditory), V (Visual), or K (Kinesthetic) in the Style Category column before the appropriate statements, based on the following:

A = #3, 7, 9, 10, 15, 17, 20, 22, 26, and 30
 V = #2, 4, 5, 8, 13, 18, 19, 23, 25, and 27
 K = #1, 6, 11, 12, 14, 16, 21, 24, 28, and 29

Finally, count the number of checks next to statements, by Style Categories, and put those totals by the appropriate letter on the **Total** line. For example, if the total number of checks next to statements labeled “A” was 5, you’d put a 5 next to the “A” on the **Total** line. You’d do likewise for totals next to “V” and “K.”

The letter with the highest Total next to it is likely your primary learning modality or style, while the second highest score indicates your backup or secondary preference. If you have equally rated styles, you likely shift between them depending on the situation and learning function in which you are involved.

SOURCE: © *The Creative Training Idea Book: Inspired Tips & Techniques for Engaging and Effective Learning*, Robert W. Lucas, AMACOM, New York, New York. 2003

BRAIN-BASED LEARNING RESOURCES

The Creative Trainer Blog:

<https://www.thecreativetrainer.com>

Books:

Lucas, Robert W., *The Creative Training Idea Book: Inspired Tips and Techniques for Engaging and Effective Learning*, AMACOM

Lucas, Robert W., *Energize Your Training: Creative Techniques to Engage Learners*, ATDP Press

Lucas, Robert W., *The Big Book of Flip Charts: A Comprehensive Guide for Presenters, Trainers, and Team Facilitators*, McGraw-Hill

Lucas, Robert W., *Training Workshop Essentials: Designing, Developing and Delivering Learning Events that Get Results*, Wiley/Pfeiffer

Bowman, Sharon, *Using Brain Science to Make Training Stick: Six Learning Principles That Trump Traditional Teaching*, Bowperson Press

Gardner, Howard, *Multiple Intelligences: The Theory in Practice*, Basic Books

Gregory, Gayle H. & Parry, Terence, *Designing Brain-Compatible Learning*, Corwin Press

Hollins, Peter, *Neuro Learning: Principles from the Science of Learning on Information Synthesis, Comprehension, Retention, and Breaking Down Complex Subjects*

Hollins, Peter, *The Science of Accelerated Learning*, PH Learning, Inc

Jensen, Eric, *Brain-Based Learning: The New Paradigm of Teaching*, Corwin Press

Materna, Laurie, *Jump Start the Adult Learner: How to Engage and Motivate Adults Using Brain-Compatible Strategies*, Corwin Press

Medina, John, *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home and School*, Pear Press

Nash, Ron, *The Active Workshop: Practical Strategies for Facilitating Professional Learning*, Corwin Press.

Promislow, Sharon, *Making the Brain Body Connection: A Playful Guide to Identifying & Releasing Mental, Physical & Emotional Triggers*, Enhanced Learning & Integration Inc.

Reynolds, Garr, *Presentation Zen Design: A Simple Visual Approach to Presenting in Today's World*, New Riders

Sousa, David A., *How the Brain Learns*, Corwin

Sousa, David A., *Mind, Brain, and Education: Neuroscience Implications for the Classroom*, Solution Tree Press

Taylor, Kathleen & Marienau, Catherine, *Facilitating Learning with the Adult Brain in Mind: A Conceptual and Practical Guide*, Jossey-Bass

Internet Resources:

Slide Tips - <http://www.garreynolds.com/preso-tips/design/>

APPLYING BRAIN-BASED RESEARCH TO ADULT LEARNING

Robert W. Lucas

[Applying brain-based research to adult learning environments](#) can mean the difference between passive attendees being provided with information that they may not understand or act upon and creating a learning environment in which participants take an active role to gain, retain, recall and use what they experience. The latter approach typically leads to assimilation of information and transfer of knowledge and skills into the workplace.

Why Training Fails

One reason that training often fails to meet stated objectives is that those facilitating the transfer of information are often ill-prepared for the task. The challenge in organizations is that while many trainers are experts in their field, quite a few have never been educated on [adult learning principles](#) or attended training on effective delivery techniques. This situation leads to well-meaning employees delivering information in a manner that does not lead to participant engagement or facilitate true learning. Many trainers do not realize that there is more to effectively delivering information to a group than simply standing on a podium next to a lectern and reading a stream of information verbatim from projected slides. The latter is often what participants experience. Even if trainers are more experienced, they are often not familiar with brain-based learning theory. As a result, they fail to design, develop and deliver learning events that can maximize learner potential.

Is there a remedy for this problem? Yes. It involves organizations and trainers taking action to identify best practices for creating participant-centered learning environments. That includes preparing trainers to be more effective when designing and delivering content to participants. A key step in that process is applying brain-based research and accelerated learning techniques to their training initiatives.

A Solution to Learning Breakdown

For years, learning theory has pointed to the fact that adults learn differently from children. The approach to training adults must be specific to their needs. Successful facilitators can often help improve learning outcomes by [creating training environments](#) that incorporate techniques that apply research on ways to stimulate brain neurons. Training outcomes can be improved by tapping into some of the early learning memories that trainees possess. Additionally, by creating a training format and environment that energizes and involves participants, facilitators can provide a vehicle that encourages active involvement. For example, much of the brain-based research done to this point shows that learning strategies involving participant engagement, activities, fun, novelty, repetition, and environmental elements (e.g. sound, light, color, motion, movement, associated visuals, and music) assist adult learners in maximizing learning outcomes. This is due to increased focus, interest, brain activity, and active participation. Since the goal of adult learning is to assist participants in their effort to gain, retain, recall and use what they

experience, it is logical to try to prepare a learning event that is conducive to learning. This can be accomplished by capitalizing on brain research.

Maximizing Learning Outcomes

One of the simplest and effective means of generating participant enthusiasm in training is to make the event fun. This does not mean using activities, props, and other learning aids just to entertain learners. Everything that you do, say, or use in a training session should have a purpose and be directly related to your stated learning objectives. A big mistake that some trainers make is that they use a lot of activities, toys, noisemakers, or other approaches in their session but fail to help learners understand why the items are being used or how they relate to program content. For example, many trainers use [icebreaker activities](#) that do nothing more than have people get to know one another at the beginning of a session. While it is true that many people often prefer to interact with others who they know; using valuable training time for such activities can be a potential waste of time. Unless your session is on professional networking or interpersonal communication and you can show the relationship of your activity to learning objectives, you are better off using some other technique and maximizing your session time.

If you want to use an icebreaker so that people get to know one another, have them work in teams or table groups. During the activity they can do a quick introduction, telling their name, where they work, and something related to the program theme. For example, after brief introductions in a program on teambuilding, participants might share one thing that they believe limits team effectiveness in their workplace. A randomly selected group leader could capture these ideas on a flip chart page which is then posted on the wall for all to see. Each leader could read off the items from their group list. The facilitator could then use common items from the list as discussion points or the ideas might be grouped by common themes for discussion. This type of activity physically and mentally engages learners and allows socialization, which researchers know is a beneficial outcome of a training session. These results tie to brain-based learning research.

A more effective means of ensuring that learners enjoy a training event, become active participants, and assimilate desired knowledge and skills is to look back at your learning objectives. Match every bit of content, activity, graphics, music, props, and other planned learning vehicle to them. If there is no direct correlation, find something else that does. From a brain-based learning perspective, this means tapping into some of the things we know about how the brain best processes information and remembers information. Here are a few examples of different brain-based environmental elements that are often used in training and their correlation to brain research:

Motion/movement (e.g. ice breakers, cardio exercises, team activities, and facilitator nonverbal movements). By getting participants up and moving during session as they participate in various [individual and team activities](#), you enhance their level of focus or alertness. This occurs because physical activity increases the flow blood, which carries oxygen to the brain and “wakes it up” by helping to stimulate neurons. Simple activities like “stand ups” can be used at the beginning of a session. Simply ask a series of yes/no questions related to the topic as you do an audience

needs assessment (e.g. If you are facilitating a train-the-trainer program, you might ask questions like “Have you ever attended a trainer-the-trainer program before?”). Anyone who has would stand up until you ask them to have seat. You would then continue asking questions. The movement would focus their attention on you, help gather useful information on the make-up of your participant group and stimulate their brains so that they are more receptive for what will follow. Throughout the session, you could use a similar activity at other points in the content delivery. Another way to introduce movement is to have everyone stand and do some simple slow twists and stretching exercises as a group for 30 seconds or so. Again, this refocuses and refreshes their brains. Your movement and gestures as a facilitator can also attract attention and help refocus your learners.

Music. Brain researchers have found that [music](#) can release the pleasure chemical (Dopamine). This is the same chemical released when eating a pleasurable meal or having sex. When people listen to music, different areas of the brain are activated as they hear sounds. For non-musicians, the right brain hemisphere “lights up” while musicians listening to same music show activity in the left hemisphere. This is because non-musicians listen to the melody while musicians focus on more complex elements, such as, language structure and melodic context. Research also shows that listening to music increases blood flow to various areas of the brain. This impacts stress levels, memory, and even the immune system. Because of all this, you might consider music associated with your subject matter that can lift and excite your learners. For example, if your session topic is on time management, use songs at the beginning and during breaks that related to the theme of time. When participants are leaving the room on a break for lunch, you might play something upbeat like Celebrate, Jump or the theme from the Rocky movie. When you want them to concentrate (e.g. during a reflection activity or when prepping for a quiz), play something with fewer beats and more melodic with no words such as classical or new age music.

Color. Many studies have been done on [use of color and how it impacts people emotionally](#). For example, red stimulates and evokes excitement or passion while yellow indicates caution, warmth or a positive meaning. Give thought to the colors you select for handout paper and ink, slides, board and [flip chart](#) markers that can add visual variety in a training session. They can also project subliminal messages that you may or may not intend. Even the color on walls can have an impact on your learners.

Novelty/Props. Some trainers use [humorous props](#) for themselves or participants in order to gain or focus attention and add a bit of humor and novelty to the environment (e.g. clown/animal noses, noisemakers, party favors, or wall hangings). Such devices can be also be used in activities. For example, you might acquire an equal number of different types of rubber animal noses with elastic straps. Place these in sealed small paper bags and give one to each participant. When ready to begin a group activity, tell them to open their bag and wear what they find inside. Direct them to them move around the room to form groups of people who are “like” them (same type of nose) and participate in the activity that you assign. This adds humor and functionality to the session while releasing dopamine as learners enjoy the activity in which they are participating.

These are just a few of the strategies for applying brain-based research to adult learning. In my webinar *Energize Your Training: Using Brain Research to Enhance Your Learning Events* I share additional ideas for enhancing your training programs and environments. For more ideas on the topic of brain-based learning and ways to improve the learning outcomes in your own training events visit my blog <https://www.thecreativetrainer.com>. Also, check out two of my books: *The Creative Training Idea Book: Inspiring Tips & Techniques for Engaging and Effective Learning* and *Energize Your Training: Creative Techniques to Engage Learners* at www.robertwlucas.com/books-by-robert-w-lucas.

CREATING INTERACTIVE AND STIMULATING LEARNING EVENTS

Robert W. Lucas

Creating interactive and stimulating learning events is essential in an age where organizations and individuals are striving to do more with less. They want and need knowledge and skills but have limited time to invest in obtaining those things. One solution is to develop effective training that capitalizes on proven techniques that help participants better gain and process information more efficiently. That is where applying brain-based learning strategies can help.

These days, training programs come in different lengths and types. They are being offered with varying types of technology while others are still conducted in the traditional classroom format. No matter what form you are using, research on how the brain processes information will benefit you. According to brain-based theory, learning is an active process in which challenges, ambiguity, and situations encouraging creativity are presented using accelerated learning strategies that engage participants. Everything from the learning environment to personal actions impact participants. Questioning, problem-solving, ongoing interaction, and feedback are key elements of the process. It is best when learners are also encouraged to make associations between their current knowledge and skills while forming new patterns of thinking and making connections. Such links are made through stories, analogies, metaphors, examples, relevant jokes, and various interactive techniques. Additionally, in brain-based learning environments, instruction and materials must be learner-centered and delivered in a manner that is fun, meaningful, relevant, and personally enriching. There must also be time built in for learners to process and assimilate what they experience so that they can make mental connections and master content.

Because of the brain's ability to multitask or process many pieces of stimuli simultaneously on different levels, you should remember that using a traditional structured or linear approach to training can be a learning disaster. Applying a delivery technique that involves a rigid step-by-step presentation of concepts or ideas can lead to participants becoming disengaged, bored or distracted. They will also likely view time spent in a training event as being wasted and unproductive. Instead look at an brain-based approach which taps into brain research and the application of what is referred to as accelerated or experiential training techniques. Among others, brain-based learning environments typically include the use of color, sound, smell, light, music, motion, movement, repetition, reward, and engagement.

Addressing Learning Modalities

Of the five human senses, there are three primary learning modalities (sometimes referred to as styles) that are used to gather information and transmit it to the brain for processing. These are visual (seeing), auditory (hearing) and kinesthetic (doing). Most people have a primary and secondary preferred modality that they use. Some research indicates that 0-65 percent of learners are visually dominant, 25-30 percent are auditory, and 5-15 percent are kinesthetic. If you can

discover the preferred modalities of your learners and provide content in formats that aid their learning your training will be more successful. Personally, I am a visual/kinesthetic learner. That means that I learn best when I see something and then physically experience it through practice. By recognizing my own learning preference, I can avoid designing training programs geared to personal preferences and instead build in activities and materials that aid my learners. When designing your own programs, you should continually alternate between the three modalities. If you do not know your preferred style(s), you can do an informal styles assessment.

Sample Brain-Based Learning Event

The following is a synopsis of a training program I created and conducted using brain-based learning theory. The approach I used incorporates some of what researchers have discovered related to how the brain best obtains, processes, stores, and recalls information.

A while back I conducted a two-day train-the-trainer event. Since my key objective in doing such programs is to share techniques and strategies for effectively delivering content, I wanted to model the behavior I planned to encourage during the program. As such, I created a brain-based learning environment where participants would be exposed to a variety of stimuli that would encourage mental and physical engagement for the duration of the workshop.

To prepare the room for the program I started setting up tables and equipment along with training aids the night before we were scheduled to start. This is my typical approach for intensive programs since I use so many different visual aids, props and other items that waiting until the morning of a session is too stressful. Since I want to be fresh and invigorated when students arrive, I do not like having to rush around doing things at the last minute. Besides, as any experienced training professional will tell you, there are little gremlins that hide in your training room just waiting to cause mischief. They interfere with your audiovisual equipment, take things out of your room that you brought in the night before, and generally try to unsettle you before participants arrive. Often, these gremlins are fellow employees or hotel staff members who need to “borrow” your flipchart easel or projector for a meeting, take a few chairs from tables, or otherwise disrupt all your well-planned efforts. To following is an idea of what the room looked like.

- **Room/equipment setup.** I realize that the room configuration layout that I use for a training program can have a major impact on participant impressions and ultimately on the learning outcomes. Since I planned to have attendees participating in various group activities throughout the session, I opted to have round tables set with all chairs facing the front of the classroom. There was space left between the tables because I planned to have participants moving around throughout the day. I also left open space at the back of the room because some of my planned activities required people to form in teams for some of the activities.

On the tables, I set up materials for each participant. Cover sheets on handout packets were printed on four different colors of paper based the total number of participants divided by four. This is the number of groups I planned to use for several of the activities.

In addition to adding color to the room and brightening the environment, the handouts had a functional purpose of identifying which group each participant had been randomly assigned to join (e.g. red, green, blue, and yellow). The session evaluation form was also printed on a fifth color of paper. It was placed below the handout, but slightly above so that it could be easily found as I referenced it in my opening remarks. Other materials were also placed in identical locations on the table for each participant. There were four different colors of ink pens, an equal number of different colored rubber brain shaped pencil erasers, and name tents for each learner. The latter had different colored stars in the upper right corner because those too would be used to identify people in different groups. Each participant also got a bottle of water. Every place setting was identical in position so that when participants entered, there was the impression of a carefully planned and organized event before they even started. This ties into the adage of “first impressions being lasting.”

By randomly moving people around in groups throughout the two-day session, I provided ample time for them to network and share ideas, since socialization is important based on brain research. There were also four different colors of Mr. Sketch scented markers for writing on name tents and flip chart pages during group activities. The specific brand of markers were selected because they are water-based and designed for writing on flip chart paper without bleeding through and because they have different fruit scents. This ties into what researchers have found about introducing smells into the learning environment to help stimulate brain neurons.

At the front of the room, I set up my projection screen and placed my projector on the back side of an 8-foot table skirted table that was positioned to face vertically from front to back of the room. The skirting around the table provides an area out of view where I can store supplies, boxes, and other unsightly things that can distract as people’s minds wander and they start examining things in the room. This configuration allows me to have any props, notes or other needed materials with easy reach. It also permitted me to get closer to my participants and removes a perceived psychological and physical barrier that would be created if the table was set horizontally and I were behind it. By being to the side of the table, I had the ability to better manage the environment by opening and closing the distance between myself and learners. This comes in handy when participants become be distracted with texting or talking to others. In those instances, I can casually move towards someone while I speak to the group, make direct eye contact, and smile. This nonverbal cue is usually enough to refocus them on me and the session content. If that does not work, I might also ask a direct question or for their opinion on what I just said. This normally jerks them back to the session content.

With all the furniture and equipment in place the only thing I need to do the next morning is arrive an hour or so before scheduled start time. When I do, I simply plug in my laptop, test equipment and make any last-minute adjustments to the environment. This approach

allows me time to get some water, go to the restroom, and be ready to greet each participant and he or she arrives.

- **Handouts.** As a visual/kinesthetic learner, I love handouts when I am a participant. They give me something to look at as I take notes on them throughout a session. In doing so, I am reinforcing key concepts in my brain. Some trainers will tell you to wait until the end of a program to distribute them or to offer handouts and a copy of slides as a technique for getting participants to provide you with their email address. I personally think this is a deceptive means of getting information to use for follow-up advertising. Additionally, from a brain-based learning perspective, you miss an opportunity to further engage visual and kinesthetic learners during your session if you do not pass handouts out at the beginning.

When creating handouts for the train-the-trainer session, I used two approaches. First, I created bullet-pointed, fill-in-the-blank pages that corresponded with each slide. Doing this allowed participants to capture, process and synthesize the information in their own words as they compare it to knowledge that they already possess on a topic. In addition to the handout package I prepared several additional handouts. These contained additional in-depth articles, lists of information, and resources to supplement the session content. This added value approach is usually appreciated by attendees and is like a bonus for registering to attend the program. By providing the handouts, I negated the need to have to send out copies of the slides and saved me and my learners time after the session.

- **Motion/Movement.** The human eye is attracted to movement as part of a human's natural fight or flight reaction to stimuli. As a facilitator, you can use motion to your advantage to attract or refocus attention throughout a session. Never become tethered to a lectern or projector. Instructors who are new and inexperienced, insecure, or those lacking confidence often do this. In my learning environments, I am continually positioning myself around different areas of the room. I use interactive room setups (e.g. scattered round tables, u-shape, or fishbone) and move into and out of my participant's seating areas. I am sometimes at the front, side and rear of the classroom. This results in my learners also moving their heads or chairs to follow me, thus stimulating their brain with added blood pumped to the brain with a fresh supply of oxygen. All of this stimulates their brain neurons and aids alertness. If you are teaching via technology (e.g. podcast or webinar), you can also ask learners to stand and stretch for thirty seconds to re-energize them and provide a brief mental break. If you are in a classroom using a technology-based platform, build in activities where learners pair up with people in different parts of the room and work together for a short period before returning to their own computer.
- **Music.** Brain researchers have found that music can release the pleasure chemical (Dopamine). This is the same substance released when eating a pleasurable meal or

having sex. To get a similar response from participants, I built in several opportunities to use music throughout my train-the-trainer workshop. Music playing as learners entered the room for the first time or returning from lunch or breaks filled the environment with sound to break the deafening silence often encountered in these instances. It was also used to signal the end of an activity, and at the end of the session as people left (e.g. “Celebration” by Kool and the Gang, “The Time of My Life” by Jennifer Warnes and Bill Medley, or “Happy Trails to You” by Roy Rogers and Dale Evans are three songs from which I like to choose).

- At the beginning of my session, I referred to the various noisemakers and props that I planned to use in the session and explained their purpose. Since sound can attract attention, I use a variety of noisemakers when I am teaching in the classroom. If you have ever been in a training session where the facilitator is shouting, “Okay, wrap up your comments and please have a seat” while no one seems to hear or react, you can appreciate the value of a loud noisemaker. Instead of taking such an approach, I pulled out a metal gong, a metal cow bell, a loud whistle, or played a short snippet of music (e.g. the music used on the gameshow Jeopardy as participants are writing down and answer to a question is great) to signal the end of various activities. As participants heard a sound or music, they knew to stop talking and refocus on me and the front of the classroom so that we could move on.
- **Flip Charts.** Many people consider flip charts as “old school” and not worth using. I beg to differ with that opinion. Using this time-tested training aid can add variety to virtually any classroom experience...and in a pinch you can tape multiple pages together if you need an impromptu slide screen. Additionally, you can add color, novelty, and activity to a session by using flip chart pages for sharing information.

One reason that I use flip charts is that many people are visual learners and are easily distracted as they take mental breaks during your session. That is why I suggest that you remove anything possible from the training room that is not related to the learning topic. For example, if you are holding a session in a room that has generic photographs or pictures that can be taken down, I encourage you to do so and store them out of sight until the session is over. If you cannot do that, I suggest that you try a technique that I often use; create flip charted quotes pertinent to the content. Put colorful and decorative borders around the edges of each page and hang them over the pictures in the room. Doing this eliminates distractions and gets learners thinking about session content before the program even begins. As they come in and sit at their tables, they will normally start scanning the environment and reading the quotes. Psychologically, you can get participants tuned in to the session topic before even opening your mouth.

In lieu of quotes for my train-the-trainer program, I used a flipchart-based group energizer activity. I posted flip chart pages created with various colored markers and displaying closed-ended questions that I planned to use for an early participant needs assessment activity. When asked to do so, participants moved around the room to each charted question and, using the colored marker located on a chair by each page, put a single vertical line under the response that best described them.

By using closed instead of open-end questions, I was able to get quick responses that could be tabulated on a flip chart easel at the front of the class. I used those for an activity debrief and introduced the concept of learning modalities before moving into the session. Doing an activity like this gets participants immediately up and moving and talking to one another at each flip chart page. It also helps give you and your attendees a mental picture of the degree of knowledge and experience in the room. In addition, it shows an example of how to use brain-based theory in a training event and provides an activity that learners can then replicate in their own training. Based on what I discovered in my session, I later asked people with certain experiences or knowledge to share ideas, examples or other input pertinent to topics we addressed. This engaged my learners and shared responsibility for learning among others in the room. Some of the questions I used for the assessment were:

-Do you know what brain-based learning is?

Yes No Unsure

-Have you ever attended a creative training program before?

Yes No

-How many training programs do you conduct each quarter?

1 2 3 4 5 or more

-On what subject areas do you train?

Technical Non-technical Both

-What is your primary learning modality?

Visual Auditory Kinesthetic Unsure

After debriefing the assessment activity and sharing some opening remarks, I asked a volunteer to come up and help me by using multiple colored markers to flip chart participant responses to my question: “What do you most want to get from this workshop?” Every participant then shared their name, organization, and what they wanted to learn during the session. As people shared their needs, if something was not on the agenda was mentioned, I asked if others also wanted information on that topic. I then mentioned that if time permitted at the end of the workshop, we could talk about these issues and said that I would be happy to have a personal discussion with those interested

during breaks. If time permits, there are several benefits of doing such an activity if time permits. First, you immediately engage people and help make them feel that they are a part of the program and their opinion matters. You also potentially identify key topic areas that learners need but you may not have planned. In the latter case, you might weave information about the topics in wherever appropriate and time permits. Finally, you create a check point (the flip charted list) that you can post on the wall and refer to throughout the workshop as you point out that content just covered pertains to one of the needs. At the end of the workshop on day 2 you can also go back to the list and ask if the person offering each point got what he or she needed during the program. This effort reinforces and reminds participants of the value of the program. Then, they will likely share that with their supervisor or sponsor, which helps build support for your program in the future. At the end of my program on day 2, I looped back to the posted list of things people wanted to get to ensure their needs and expectations were met. Among other things, this activity addressed brain research findings related to reinforcement/reward, participation, use of motion (mine and the volunteer), color (flip chart markers), memory, and engagement.

As this second activity ended in my session, I had everyone give our volunteer scribe a round of applause and presented her with a small reward in the form of a colorful brain shaped stress toy. Doing that related to my brain-based program theme and potentially served as a reinforcement for the volunteer. Potentially, it encouraged others to volunteer throughout the workshop. Like many people, my volunteer likely took the toy back to her workspace where she will see and possibly use it in the future. Others might see it as well and ask where she got it. In both instances, there is a chance that using the prop will cause her to recall her learning experience. Such public appreciation relates to what researchers have found about the brain responding positively to recognition and reward for many people. Throughout the two days of the workshop, I used similar rewards and recognition.

- **Slides.** Slides are great visual aids if they are developed and used effectively. That means using font that is large enough to be seen throughout the room or on a computer screen. In my session, I always include images that relate to the topic and complement the text to enhance effectiveness. Additionally, I limit each slide to one concept and have around 3-5 bullet points without using long sentences. When projecting a slide, I introduce one point at a time on a slide rather than having all points appear simultaneously. The latter leads to learners trying to read everything while you are discussing a simple point; thus, reducing effectiveness and learner comprehension. Simply displaying a seemingly never-ending flow of slides with bulleted text will not meet this goal.

If you are going to use slides in a technology-based session, allow at least one minute so that learners can read, take notes if desired, and process what they read. Also build in slides that ask questions or cause learners to stop, reflect and assimilate what they were

learning. Another way to gain input is to utilize the chat function when available, along with polling and chat functions that might be on your delivery platform. These function mechanisms can be clicked by attendees during training to show responses and reactions to comments and questions that you ask. Additionally, try to interact with learners every 2-3 minutes by asking questions or posing a problem for them to consider and to which they might potentially respond in the chat area.

- **Motion/Movement.** The human eye is attracted to movement as part of a human's natural fight or flight reaction to stimuli. As a facilitator, I use this to my advantage to attract or refocus attention throughout my session. I encourage you to never become tethered to a lectern or projector. New, inexperienced, insecure, or instructors lacking confidence often do this. In my learning environments, I am continually positioning myself around different areas of the room. I use interactive room setups (e.g. scattered round tables, u-shape, or fishbone) and move into and out of my participant's seating areas. I am sometimes at the front, side and rear of the classroom. This results in my learners also moving their heads or chairs to follow me, thus stimulating their brain with added blood pumped to the brain with a fresh supply of oxygen. All of this stimulates their brain neurons and aids alertness. If you are teaching via technology (e.g. podcast or webinar), you can also ask learners to stand and stretch for thirty seconds to re-energize them and provide a brief mental break. If you are in a classroom using a technology-based platform, build in activities where learners pair up with people in different parts of the room and work together for a short period before returning to their own computer.
- **Props.** In addition to using various visual aids to add color and novelty, I use a variety of session related toys and props that relate to brain-based concepts. As I mentioned earlier, I use a variety of colored rubber brain erasers, props, and materials to randomly form groups of learners for various activities during my workshop. For other types of session topics that I facilitate, I use appropriate props for those session. For example, smile face erasers for customer service or interpersonal communication, telephone erasers for telephone service skills, etc. You can find an enormous variety of such props online at Oriental Training Company, Rhode Island Novelty, and U.S. Toy Company.
- **Party Decorations.** To add a bit of pizzazz to my training programs, I often use party favors and decorations to add color and glitz. In the train-the-trainer program, I wrapped a metallic multi-colored tinsel skirting around my instructor table, then sprinkled colored metallic confetti on each participant table. Confetti is available in a variety of shapes so for some session topics, you may be able to find a related shape for your session. Otherwise, just use stars or geometric shapes, as I did for the trainer program.
- **Candy.** Other things that I put on participant tables before they arrived were bowls of peppermint candies on each table for them to eat throughout the day. Research has shown that smells like peppermint, spearmint and citrus stimulate brain neurons and help wake

up the brain. I also often give miniature chocolate candy bars to people as rewards for answering a question or offering ideas or comments. The burst of sugar helps give a short energy boost. As an alternative, I sometimes add chocolate candy into the bowl with mints.

All in all, my goal in planning and delivering this two-day workshop was to create an interactive environment where learners got information and ideas that they could immediately apply in their own program. I did this by using a smorgasbord of brain-based learning techniques and strategies. These were built on what scientists and researchers have discovered in recent decades about how the human brain best gains, retains, recalls and uses what it experiences.

For more information about how to create a brain-based learning experience for your learners, visit my creative training blog www.thecreativetrainer.com or check out my books on creative learning and training at www.robertwlucas.com/books-by-robert-w-lucas.