

## **The Importance of Brain-Based Research on Learning Environment Design**

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The brain is the most complex portion of the human body and there is so much that scientists do not yet know about brain functioning. On the other hand, in the past several decades, they have created volumes of information on how the brain gains and assimilates information. The 1990s have been called the Decade of the Brain. This is because of the extensive amount of data on how the brain learns that researchers collected during that era. There was an explosion of new knowledge about ways in which humans learn and grow and how the brain functions in order to manage everyday activities.

Each person learns similarly, yet in different ways, based on their unique brain. Through studies and the use of technology such as, Positron Emission Tomography (PET) scans, Computer Tomography (CT) scan (sometimes called a CAT scan), and Magnetic Resonance Imaging (MRI) scientists were literally able to non-invasively peer into the brain as it received and analyzed stimuli. In doing so, they were able to view and photograph different areas of the brain as it addressed the information that was being received. The result was a virtual mapping of the brain to identify where many specialized functions occurred. Because of this information, we now better understand how and where learning occurs and can develop strategies to strengthen learning activities.

This is not to say that all the hype by some proponents of brain-based learning is accurate. Like any other concept or theory, brain-based learning has limitations and sources of information about it should always be verified, and in some cases challenged. Still, there has now been enough research done to indicate the value of implementing many of the findings on how the brain learns best.

### **Implications of Brain-Based Learning**

So why should you care about all this research when designing your training workshops? Basically, because the findings allow you to use what researchers discovered to enhance your learning environment, prepare yourself and learners more effectively for your learning events, and create a workshop that will not only meet, but exceed, your learners needs and expectations every time. The exciting part about this is that by applying some basic concepts of brain-based learning, you can help stimulate learners while making your workshops more fun to present. Just imagine being able to play with toys, do magic, show popular video segments, listen to a variety of music, enjoy a smorgasbord of color, draw caricatures and be paid for it! Those are just some of the creative possibilities that a brain-based learning environment can provide. More importantly, through use of such tools and techniques, you can better engage and interest your learners and increase the opportunity for a more powerful learning outcome.

For years teachers have used games, toys, music and other stimulating strategies in teaching kindergarteners and elementary school children. While learning basic life skills, children are actually having fun and playing with their friends without even knowing that they are taking in and honing skills that they will use for the rest of their lives. Skills like teaming, interpersonal communication, problem-solving, decision-making, time and resource management, and much more are being learned right there, in the dirt, with a lot of screaming, laughing, playing and FUN! So what changes later in their learning environments? Why do adults often expect a learning environment that is staid and rigid, where someone lectures to them and where they have to simply take notes and then figure out the answers to the questions they are asked? Unfortunately, this is often because of conditioning. Somewhere around their first few years of schooling, someone started sitting students in rows of desks and talking at them for endless hours, then tested them on their “knowledge.” This is the model (pedagogy) that many people coming to your workshops will possess. It is up to you to shake up their paradigm and shock them into a new state of consciousness by creating an environment that is brain-friendly and learner-centric. One that will cause learners to sit up, pay attention and become actively involved in their own learning, while taking ownership and responsibility for their learning outcomes.

### **Creating a Brain-Based Environment**

A brain-based learning environment differs from the standard classroom in many ways. The biggest difference is that learners really are at the center of the program and room design in a brain-based environment. Since your participants are your sole reason for being there in the first place, it is crucial that everything be truly learner-centric and focused on ensuring that they get the maximum learning possible from the experience.

Every element of your environment will affect your learning outcomes. For that reason, all factors deserve serious consideration when you are in your “Design” phase of the ADDIE (Assessment, Design, Development, Implementation and Evaluation) model.

### **Brain-Based Environment**

In a brain-based learning environment, the following elements are present:

- Trainee differences are recognized or addressed.
- Stimulating background music is playing upon entry.
- Colorful handouts are neatly arranged on tables before learners enter.
- Colorful posters and images are displayed.
- Natural or full spectrum lighting is used.
- Upbeat, open, outgoing trainer(s) facilitate learning.
- Plenty of constructive feedback is given to learners.
- Engaging activities are used to stimulate learners.
- Multiple intelligences are addressed.
- All learning modalities (visual, auditory and kinesthetic) are addressed.

- Tables arranged for group involvement.
- Ample and appropriate refreshments and hydration are offered.
- Vegetation (non-flowing plants) is present.
- Multiple types of training aids are used.
- Interactivity is expected and received by learners.
- Problem-solving and challenge are common.
- Props, toys, and rewards are used to aid learner motivation and create an atmosphere of fun.

**Source:** Lucas, Robert W., *Training Workshop Essentials: Designing, Developing and Delivering Learning Events That Get Results*, Pfeiffer, San Francisco, CA (2009).

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