

Dear Parents,

Brenda, Linda and I just returned from the BrainExpo conference in San Diego, California. You probably know this already because of our exuding enthusiasm! As Linda said, “The BrainExpo workshops made me realize that we are already teaching in a brain-friendly manner. The sessions helped me fine tune my teaching skills even more.”

Thanks to **Stacey and Jim McCarthy, Sam Kennedy**, and an anonymous donor for making this trip possible.

In my column this month, I’d like to tie some of the latest brain research to the museum projects being undertaken by all of the students. All quotes are from the book *12 Brain/Mind Learning Principles in Action* by Caine, Caine, McClintic, and Klimek.¹

The authors describe three aspects that help create an enriched environment for learning:

- **Relaxed alertness**
- **Immersion in complex experience**
- **Active processing – Consolidating Learning**

Let’s look at each of these, as well as the primary keys for learning, and see how they relate to the museum studies underway.

Relaxed Alertness

Emphasized at the BrainExpo and the first thing mentioned in every book on the topic, emotional climate is critical to learning. When a student perceives stress (ranging from “Will I get to school today without be shot?” to “The teacher said the test is so important that I’m really stressed out.”), higher order thinking skills shut down and the brain focuses on *fight or flight* reactions.

The authors noted above (and other experts in the field) use the term *relaxed alertness* as necessary for optimal learning. This means we want to create an environment that is stimulating, yet nurturing and supportive of each student. Inherent in our approach to everything we do at the school, we create a climate where students feel confident and excited about learning.

How does this transfer to the museum? Students become engrossed in topics of interest to them. They are excited about learning more about their topics as evidenced by the questions they pose in their museum planning sheets. There is no test to be expected at the end of the study. Information is learned for the pure joy of learning.

The authors write:

Relaxed alertness . . . is defined as consisting of low threat and high challenge. The state exists in a learner who feels competent and confident and is interested or intrinsically motivated.

Sounds like museum, doesn’t it?

Immersion in Complex Experience

The authors write:

The human brain learns through experience . . . The brain learns by making connections between what is experienced and what the experience means to the learner. Ultimately the brain needs to “own” the learning by having the learner do something with what has been learned.

It's not enough during museum study for students to passively take in information. In order to make that learning their own, they need to actively construct their knowledge (sounds like Piaget, doesn't it?). This means that in addition to reading about their topics, they take it a step further by making graphs, charts, maps, models, timelines, and interactive learning props (something hands-on for visitors to try). Hands-on, active learning is what museum is all about.

Active Processing – Consolidating Learning

In the ways mentioned above, the students manipulate information in meaningful ways which helps them to store that information in their long-term memory. The brain only stores information if there is *sense and meaning* attached to it. What better way is there to grasp new information than through museum discoveries on topics the students have chosen?

By the way, there's also a great deal of cross-student learning as the pupils become interested in other children's displays and pick up details and concepts. The students also present their studies to the group, furthering the students' own consolidation of the information as well as giving other students new information.

The authors write:

We are after performance knowledge – knowledge the students can use. This goes far beyond standardized testing as it currently exists.

Primary Key to Learning

The authors explain:

The primary key to learning is developing the ability to make good decisions in the real world, based on the knowledge that people have and the sense they have made of experience.

Again this sounds like the writings of Jean Piaget. His research indicates that cognitive development happens as children *construct* their own knowledge by 'figuring it out themselves.'

The authors quoted above go on to say (and make reference to the work of Goldberg, 2001, and others): *Individuals with highly developed executive functions have mastered the ability to plan and organize their thinking, use reason, engage in risk assessment, make sense of ideas and behavior, multitask, moderate emotions, work with longer time horizons [sounds like middle school!], think critically, access working memory, and reflect on their own strengths and weaknesses. These processes go substantially beyond discrete, memorized skills or information.*

Let's revel in the wonderment of New Morning School's student museum as each student's love for learning shines through and unwittingly it is that which helps students learn new knowledge in a brain-friendly manner.

I hope this hasn't been too technical. The bottom line is to enjoy the excitement your child exudes about his/her museum study, secure that good learning is taking place.

Let me know what you think.

Elaine Kennedy

¹ Caine, Renate Nummela, et al. (2005). 12 Brain/Mind Learning Principles in Action: The Fieldbook for Making Connections, Teaching, and the Human Brain. Thousand Oaks, CA: Corwin Press.