6 Key UNDERSTANDINGS About Learning:

① **THE STRESS MESS:** Perceived threats, too much stress, emotional upsets, social isolation, and unpleasant physical environments can minimize the brain’s capabilities to learn.

② **BRAINS KEEP GROWING:** Multi-sensory experiences in enriched environments can stimulate brain growth and development at any age.

③ **ACTIVE PROCESSING:** “Use it or lose it” is true! Students must have multiple opportunities to process new learning in a variety of ways to assure long-term retention.

④ **CONSTRUCTIVIST LEARNING:** Classroom practices that actively engage students in tasks that require reasoning and creativity, gathering and applying information, discovering, and communicating ideas, will assist them to construct concepts. Meaningful knowledge is constructed by the learner (“teaching by telling" does not work)

⑤ **SOCIALIZATION:** Humans have a contact urge (an innate need to connect) and we need social interaction time to develop normal neurocognitive functions.

⑥ **PLAY:** is fun, joyful, natural, and necessary for developing healthy brains. Games, challenges and mild competition can enhance student engagement – at any age.
Cooperative Group Learning - CGL

This is a well-researched and powerful instructional strategy. Using heterogeneous groups to accomplish academic tasks also fosters higher-order thinking skills and develops social skills. Ranked as one of the Nine top evidence-based strategies from Marzano’s “Classroom Instruction That Works.” Hattie’s Visible Learning Model ranks Cooperative Learning as a strong strategy with a 0.59 effect size.

Informal Cooperative Learning Groups

These ad-hoc groups may be organized "on-the-fly" as an aid in direct teaching. Informal groups are particularly useful in breaking up a lecture into shorter segments interspersed with group activity. While this method leads to less time for lecture, it will increase the amount of material retained by students as well as their comfort working with each other. (Johnson, et al., 2006, p.3:10)

Formal Cooperative Learning Groups

This type of group forms the basis for most routine uses of cooperative learning. Groups are assembled for at least one class period and may stay together for several weeks working on extended projects. Each student may be responsible for a particular aspect or role within the group. These groups are where students learn and become comfortable applying the different techniques of working together cooperatively. (Johnson, et al., 2006, p.2:2)

Cooperative Base Groups

Cooperative base groups are long-term, stable groups that last for longer periods of time such as a Quarter or Semester and are made up of individuals with different aptitudes and perspectives. They provide a context in which students can support each other in academics as well as in other aspects of their lives. The group members make sure everyone is completing their work and hold each other accountable for their contributions. Implementing cooperative base groups in such a way that students meet regularly for the duration of a course completing cooperative learning tasks can provide the permanent support and caring that students need "to make academic progress and develop cognitively and socially in healthy ways." (Johnson et al., 1998, p.10:7)

3-step interview

What is it? Students interview a partner and report back to a larger group.
Good for: Introductions and icebreakers; helping students cover a lot of material (e.g., sharing what they learned from readings); starting class discussion—; allowing all students to speak without taking a lot of class time.
How to: Have students split into pairs. Each person interviews the other, with questions provided by the instructor. Then the pair finds another couple and forms a quad. Each person takes turns introducing his or her partner and a summary of his/her responses to the group.

Round Table

What is it? In small groups, students take turns responding to a prompt or question.
Good for: Brainstorming, collaborative writing prompts, identifying key points from a reading/lecture; defining a key term; midterm/final review

© 2018, Martha Kaufeldt, Scotts Valley, CA   www.beginwiththebrain.com
**How to:** Have students form small groups. Then give the students a question or problem and have them state their ideas aloud as they write them down, each taking turns. Ideally students will not skip turns, but if one gets stuck, he or she may “pass.”

**Turn and Talk**

**What is it?** A quick informal way for all students to have a chance to share an idea, opinion, or question.

**Good for:** Check-ins, reflections, clarifications, a chance to work with another student.

**How to:** Teacher poses a question, statement, issue, or prompt to the class. Students turn to the student next to them and discuss. (Elbow Partners, Shoulder Partners, Aisle Partners. Students may clarify or elaborate and develop new perspectives.

(Spencer Kagan, kaganonline.com)

**Think-Pair-Share**

**What is it?** A chance to discuss ideas, opinions, etc AFTER a Reading, or Reflection time on your own.

**Good for:** Giving students time to think independently before responding to prompts or answering questions; efficient group activity (i.e., all students can speak without taking a lot of class time)

**How to:** Pose a question, a problem to be solved, or assign a reading for individual reflection. Give students at least 30 seconds to think prior to responding Ask students to pair up and discuss their thinking. Specify the time for each student to share. Partners may also share their thinking with another small group or the large group. (McTighe & Lyman, “Cueing Thinking in the Classroom,” *Ed Leadership*, 1988)

**Expert Jigsaw**

**What is it?** Small groups of students work on different aspects of one problem, then present their findings in a logical sequence.

**Good for:** Allowing students to become “experts” in subtopics; giving students opportunities to learn from one another; letting students get up and moving about

**How to:** Form groups of three to five. Assign each participant one aspect or segment of the lesson. Form temporary “expert” groups by having one person from each jigsaw group join other participants assigned to the same segment. Experts return to their base groups and teach the others.

**Fundamental Face-to-face Social Skills for Success:**

- Actively listening to others
- Taking turns
- Encouraging others
- Using positive statements & polite language.
- Using appropriate voice volume levels
- Participating equally – sharing responsibilities
- Staying on task and on time
- Asking for help

**Skills for Maintaining Successful Group Process:**

- Checking for understanding
- Asking for clarification
- Following the directions & procedures
- Disagreeing agreeably
- Resolving conflicts
- Reaching consensus
- Accepting differences and different opinions
- Encouraging one another and promoting perseverance
### T.I.P.S. for Grouping

| Total | Pre-assessment  
|       | Presenting new information  
|       | Demonstrate new skills  
|       | Expert speaker or guest  
|       | Observing a video or DVD  
|       | Employ the jigsaw strategy  
|       | Text book(s) assignment  

| Independent | Pre-assessment  
|             | Journal entry  
|             | Portfolio assessing  
|             | Self-assessment  
|             | Independent study  
|             | Note taking and summarizing  
|             | Reflection  
|             | Tickets out  

| Partners | Brainstorming  
|          | Checking homework  
|          | Checking for understanding  
|          | Processing information  
|          | Peer editing  
|          | Peer evaluation  
|          | Researching  
|          | Interest in similar topic  
|          | Planning for homework  

| Small groups | Problem solving  
|              | Group projects  
|              | Learning centers  
|              | Cooperative group learning assignments  
|              | Portfolio conferences  
|              | Group investigation  
|              | Carousel brainstorming  
|              | Graffiti brainstorming  

### FLEXIBLE GROUPING:
- Random
- Same ability
- Heterogeneous
- Interests
- Projects
Tackle Box of Strategies

- **Tableaux: (tableau vivant)** Students in bits of costumes and with props are posed to replicate a scene from literature or history. The participants do not speak or move. Add: At a signal (“Action”) the scene comes to life.

- **TV Game Shows: Jeopardy, Password, $100k Pyramid:** Use TV game show formats to review facts and study for tests. Students create the questions and answers. Templates for a PowerPoint Jeopardy-style game found online. [https://www.thebalanceeveryday.com/free-jeopardy-powerpoint-templates-1358186](https://www.thebalanceeveryday.com/free-jeopardy-powerpoint-templates-1358186)

- **Role-Play:** Students assume the roles of literature characters, historical figures, famous people or invented roles and collaboratively create scenes or skits. Participants determine the actions of their characters based on their understanding of the intentions, personalities, and actions.

- **Four Corners:** Classic classroom strategy to get kids up and moving around. Label each corner as 1-2-3-4 or A-B-C-D or North-South-East-West, etc. Give students a response choice and have them go to the “corner” that corresponds with their opinion. i.e. Which U.S. president was in office at the end of the Civil War? A) Grant, B) Lincoln, C) A. Johnson or D) T. Roosevelt? Which of these descriptions are you like the most? 1) Athletic, 2) Computer Genius, 3) Performer, 4) Bookworm

- **Silly Sports & Goofy Games:** Dr. Spencer Kagan says, “...my goal was to share with teachers things they could do "drop of the hat," with no special preparation, to increase the energy level in their classrooms, to have students cooperate, to provide challenges, and more than anything else, to simply make classrooms fun. I knew that when students had fun in class, the class tone shifted in a positive direction and the positive tone transferred to academics. Where there was no fun, there was less learning. [http://www.kaganonline.com/free_articles/dr_spencer_kagan/ASK23.php](http://www.kaganonline.com/free_articles/dr_spencer_kagan/ASK23.php)

- **Manipulatives & “Gimmicks”** Small Sacks, Dice, Foldables, Timers, Post-its

- **R.A.F.T. Writing:** R=Role, A=Audience, F=Format, T=Topic

- **Flipped Lessons:** Inverts the typical cycle of content acquisition and application so students gain necessary knowledge **BEFORE** class. Teachers guide students to actively and interactively clarify and apply that knowledge during class.

- **QR Codes in the Classroom:** Use QR Codes on Homework assignments to link students to resources. Have students create QR Code links in their projects and presentations.

- **Non-Linguistic Representations:** Provide opportunities for students to represent and elaborate on new knowledge by using visual and physical images.

- **S.U.M. it Up:** Summarizing and note-taking. Enhance students’ skills to organize, synthesize, and record key ideas and supporting information. Use Graphic Organizers and Interactive Notebooks.

- **Games and Mini-competitions:** Create team competitions to review information and practice skills. Make sure there are “inconsequential rewards” for the winning group. Focus on Celebration and Acknowledgement.

- **Discussion Tactics: Discussion Dots** Colored Sticky Dots a.k.a Talking Chips to regulate conversations. **Inside-Outside Circle:** Two concentric circles with one-to-one partners. Outside circle rotates to create new partners.
Unstructured, spontaneous PLAY promotes healthy brain development

Many researchers have determined that unstructured, spontaneous PLAY is a crucial developmental element (Brown, 2009; Diamond & Hopson, 1998; Panksepp & Biven, 2012; Ratey, 2008). PLAY—defined here as vigorous positive engagement with others—is considered one of the seven primary process emotions put forth by neuroscientist Jaak Panksepp.

The urges to PLAY and to SEEK out others for some enthusiastic social fun are natural primary process emotions. If young animals are healthy and feeling good, they almost invariably play together when given the chance. “Play only occurs when one is safe, secure and feeling good, which makes play an exceptionally sensitive measure for all things bad” (Panksepp & Biven, 2012, p.355). The urge to play boisterously is so strong in many young children that parents, teachers, and caregivers may discourage it. Many researchers are gathering data suggesting that attention disorders and hyperactivity may be a result of diminished opportunities for physical play. Richard Louv in his book Last Child in the Woods (2005) suggests that a lack of specifically outdoor play influences the likelihood of attention deficit. He has coined the term “nature-deficit disorder.” The simple first response to managing students with ADHD might be to consider more frequent outside and rough-and-tumble play opportunities (Panksepp & Biven, 2012; Ratey, 2008).

In the animal world as well as with humans, play teaches how to socialize successfully. It is when playing with others that one develops emotional intelligence, the ability to perceive others’ emotional state and to learn appropriate responses (also known as social intelligence; Goleman, 1995).

Practicing skills needed for the future doesn’t have to be boring or tedious. If you make a game of something, you can be getting better and have fun doing it. Playing allows for mistakes without heavy consequences. Most important, PLAY can be a terrific motivator.

- Animals that play a lot learn how to navigate and adapt and are smarter.
- Animal species that play a lot generally have larger brains.
- Active play stimulates the release of BDNF (brain-derived neurotrophic factor), which stimulates nerve growth in the brain, particularly in the amygdala.
- Lots of play correlates to the development of the frontal cortex.
- Lots of play also increases growth in the cerebellum. The cerebellum was once thought to be primarily responsible for motor control and coordination, but recent research shows it is responsible for attention, language processing, and more.
- Playing with toys and socializing in an enriched environment can prompt brain growth and development.
• Playing feels good. When people seek out opportunities and others with whom to engage in play this anticipation causes a dopamine release. Research indicates that it is our endogenous opioid and cannabinoid receptors (our brain’s natural pleasure chemicals) that are triggered to provide us with a feeling of euphoria and the giggles. This feeling can be somewhat “addicting” and may be why some children (and adults) just can’t get enough play time!

• Playing provides a way to practice, re-stimulate, and strengthen new neural connections.

In a classroom, setting aside some space, time, and opportunities for play could provide great benefits.

Integrate play opportunities into all classroom activities:

• Satisfy the natural urge children have to SEEK out fun and to socialize with their peers;
• Provide a fun way to practice new knowledge, procedures, and understandings;
• Create a natural way to build important social skills;
• Build a classroom community and diminish social isolation;
• Stimulate brain growth and development with active discovery play
• Motivate students who are hyperactive or struggling with attention disorders.
• Relieve stress and tension and allow for greater focus on learning.

(Adapted from The Motivated Brain © 2015, ASCD, Gregory and Kaufeldt)

Pages: 60-64 and 137

© 2018, Martha Kaufeldt, Scotts Valley, CA  Martha@BeginWiththeBrain.com