Teaching the Way People Learn

Module 3: Creating the Physical Learning Environment

This handout accompanies the video for Module 3. Use the handout to review information from the video and to record discussion.

---------- **Section 1** ----------

- Module 3 will focus on the careful planning of the physical aspects of the classroom.
- Research suggests that the brain is strongly influenced by the environment in which learning is occurring.
- Teachers play a critical role in designing and sustaining environments that are conducive to learning.
- Various elements in the physical learning environment influence student's attention and engagement.

Stop & Jot 1: What does your classroom's (school's) appearance communicate about learning? What physical features communicate that your classroom (school) is a Christian learning environment?

---------- **Section 2** ----------

- Research has appeared to conclude that God-given genetics (or nature, if you will) account for almost half of all student learning and intelligence leaving a huge chunk up to nurture.

- Learning is commonly divided into two broad categories - explicit learning and implicit learning. According to researchers, most explicit learning revolves around task prediction.
- Neuroscientists now have enough evidence to show how environments affect brain function.
- The Salk Institute Building is an award-winning example of applying the research to facilities.
- One of the first things students do when they walk into school is look around, listen, breathe in the air, and form judgments about the environment (usually unconsciously). Students then decide whether their surroundings feel familiar, safe, and friendly, or not.
- The research is clear - physical environments influence how students feel, hear, and see. Those factors, in turn, influence their cognitive and affective performance.

Stop & Jot #2: What elements of the physical environment can and do block learning?

---------- **Section 3** ----------

- *Attention* means a cognitive selection to a sensation, thought, or event. From a myriad of sensory stimuli, the attention systems of the brain selectively choose which stimuli are filtered out and which become part of the conscious response system.
- Researchers have identified three neural networks or systems of interconnected brain regions underlying aspects of attention: (a) alerting network, (b) orienting network, and (c) executive attention network.
- *Habituation* is a psychological learning process wherein we learn to ignore a stimulus because of repeated exposure to it.
- Certain kinds of objects and events tend to draw our attention, whereas other kinds do not (e.g., intense stimuli, new or unusual stimuli, personally meaningful stimuli, emotional stimuli).
- Researchers have found that novelty in the environment triggers the alerting and orienting systems.
- Although novelty grabs attention, it does not help to sustain it as maintaining attention involves more complex executive-function processing.

- Some research has shown that children exposed to bland, unchanging environments become stimulus adapted and appear to seek out their own novel stimulation often leading to non-optimal behavior.
- Recommendations from Jeanne Ormrod for capturing and maintaining students' attention.

___ model your own excitement and enthusiasm about classroom topics

___ relate lessons and assignments to students' personal lives

___ address topics about which many students are likely to be interested

___ occasionally incorporate novelty, fantasy, and mystery into lessons and procedures

___ vary your instructional methods, using a mixture of explanations, class discussions, in class demonstrations, etc.

___ provide opportunities for students to respond actively to the subject matter, perhaps by manipulating and experimenting with physical objects, creating new inventions, discussing controversial issues, etc.

___ encourage students to imagine what historical figures (or fictional) might have been thinking or feeling

___ ask questions that all students must answer

___ seat easily distracted students near you

___ don't ask students to engage in activities with little long-term benefit

Stop & Jot #3: Rank Ormrod's list from most useful or usable (#1) to least (#10). The blank line at the front of each strategy is for your ranking. What do you especially like about #1? Why is #10 least useful?

---------- **Section 4** ----------

- While novelty is a powerful and important instructional tool, teachers should find a balance between the need for a climate that demonstrates predictable routines and providing novel experiences and environmental changes.
- The location of student seating within a classroom influences stress levels. Seating location also influences access to resources.

- Research continues to support using a cluster arrangement when collaboration is the goal or row seating when concentrated, independent learning is the goal.
- Researchers posit that low levels of light in classrooms may affect students' ability to regulate circadian rhythms, the body's natural cycle of sleep and arousal.
- Windows in a classroom are important for more than merely providing natural light.
- Research has shown that children who were in classrooms with lighting that most mimics natural sunlight, had significantly better health, school attendance, and achievement.
- The research on the optimal color for classroom walls is less conclusive.
- Classrooms are often bombarded with white noise such as the buzzing of electric lights and hums from heating and cooling systems, audio-visual equipment, and computers. So, getting students to hear what we want them to hear in the classroom can be a problem.
- In poorly designed classrooms that fail to address and reduce ambient noise, echo effects, reverberation, and other acoustical problems, student attention decreases and off-task behaviors and discipline problems increase.
- Noise may actually prevent children from acquiring speech recognition skills. Excessive environmental noise can reduce comprehension and work performance, especially in the early stages of learning a new task.
- Background sounds can positively effect the classroom environment, however. Hardeman recommends (a) playing background music that will relax students, (b) hanging wind chimes in a window or just above air vents, (c) playing recordings of sounds of nature, and (d) adding materials that produce gentle sounds such as rain sticks or small bells to sensitize children to different sounds.
- Montessori promoted the regular practice of silence to help children regulate attention, develop inhibitory control, and become more sensitized to sounds.

Stop & Jot #4: According to Hardiman, "sounds in the classroom can and should vary widely from the purposeful chatter that comes from cooperative learning or project-based learning task to the quiet necessary while students are engaging in learning a new skill that requires concentration, and from relaxing background sounds during routine tasks to periods of quiet that promote purposeful control and reflective practices." How could you balance the sounds in your classroom? What strategies could you use to ensure a wide range of auditory settings?

---------- **Section 5** ----------

- Of all sensory perceptions, scent is unique in that input bypasses the thalamus and takes a direct path to the brain's limbic system for processing by structures associated with emotion and memory.
- Studies suggest that scents influence emotion and performance and may provide an additional environmental asset to enhance students' attention and memory. However, caution should be taken not to introduce artificial chemicals that might trigger allergies.
- Researchers have found that movement improves certain mental processes that regulate alertness, attention, and motivation. Teachers can provide students with opportunities for movement within the classroom and during content instruction.

Go and Grow

Without referring back to the video or handout, what are **three** valuable points you take away from this module?

What are **two** things you would like to do "tomorrow" with the information you learned?

Assignment: What is **one** question you have and would like to research? For the next time you meet, prepare a brief summary of your findings to share with others who may have the same question.