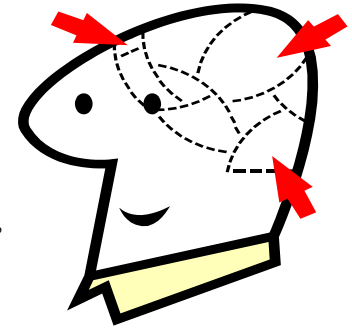


Processing

Implications of Brain Research

Brain research tells us that we make sense of new information by integrating it with prior knowledge. This has two fundamental applications for instruction. First, the brain must be ready. Second, the brain needs time to work.

The brain incorporates new learning by fitting the new in with the old. If there is no integration of the new with the old, little will “stick.” As a result, we must activate the brain before introducing new information. Parts of the brain must be active if new information and ideas are to “stick” to the old. This is why it is important to activate prior learning and experiences and why it is also important that instruction has real-life application. If we don’t get the brain active and ready for the incoming information anything that the learner hears or sees never gets beyond short term memory. That new information will just sit in short-term memory until it’s forced out by new information. This will continue over and over because the short-term memory capacity is relatively small. The brain considers what is in the short-term memory, and if it has an active site that fits with the information already in the brain it takes information from short-term memory and integrates it. The advice for teachers: **Take time to activate prior learning and make real-life connections. Without connections, the chances of new learning is greatly reduced.**



Once new information has started to flow, build in pauses for the processing to occur. Mary Bud Rowe (1983) recommends that we pause for two minutes at about ten minute intervals...hence the name, 10:2 Theory. **For every ten minutes or so of meaningful chunks of new information, learners should be provided with two or so minutes to process information.** Jay McTighe used the “three-minute pause.” He was simply applying 10:2 Theory in his own way.

Why build in these pauses? An idea is not immediately grasped from short-term memory. There is momentary confusion while a brain tries to “make sense” of the information and identify a fit to existing knowledge. The learner needs time to sort for similarities, differences, and patterns. This occurs even when students are well versed in the content material, not just when information is being presented for the first time. This holds true for reading, not just listening and seeing. That’s the fundamental premise behind the wide variety of organizers that exist for increasing reading comprehension!

There are different ways that these pauses can be effectively planned for. Small groups can share notes and/or discuss their current understanding and memory to fill in or supplement gaps. Think-pair-share is another good strategy for this, *if* students have been taught how to do the process. Don’t just tell students to talk about an idea with their neighbor. First, teach the process to students and have them practice, with guidance, repeatedly.



The research into the human brain has begun to provide us with concrete implications for instruction. These are two examples of implications of brain research to classroom instruction. **Get the brain ready, and give the brain time to work!**