

Nine brain rules

Don't let the title fool you. These "rules" only outline areas of inquiry where brain scientists and educators might reasonably do research together.

There is an institutional estrangement between the worlds of education and the brain sciences. Part of the reason for this gap is that brain scientists and educators do not readily collaborate on projects related to optimizing learning experiences. There are professionals interested in how brains work and there are professionals interested in enhancing teaching—yet very few research enterprises attempt to integrate their efforts. One is left only with the unusual call for collaborative research and a few modest research ideas. That's not meant to be hopeless. Such ideas could serve as focal points where future collaborations could materialize, were educators and brain scientists ever start an investigative dialogue. Shown below are nine facts about human learning that are well established in the "brain" literature, facts which may in the future serve as organizing nuclei for such a dialogue. These calls for research should not be confused with recommendations for good teaching, however. They simply define areas of potential scientific collaboration. Until these worlds decide to speak to each other, no such recommendations are available.



Meaning Before Detail

Maintenance of focused attentional states may be directly proportional to the emotional content of the subject. People remember meaning before detail



Every Brain is Different

Every brain is wired differently from every other brain, individually processing information in ways unique to that wiring.



People are Natural Explorers

Brains use modified forms of hypothesis testing to process information. This tendency can be observed in early infancy and is probably genetic.



Sleep is Important to the Learning Process

Sleep states are as important to the learning process as awake states.



Repetition is Critical for Memory

Practice increases learning. Repetition and rehearsal are critical for the successful creation of long-term memories.



We are Visual Learners

Half of the human cortex is devoted to the processing of visual information. We process visual information more effectively than any other type.



Focused Attentional States Facilitate Learning

People do not learn from continuous long stretches of linearly supplied information.



Exercise Aids Learning

Moderate, regular exercise positively affects human learning and buffers against the harmful cognitive effects of stress.



Stressed Brains Don't Learn Very Well

Stressed brains do not learn the same way as non-stressed brains.