

## Book Notes:

According to Jacqueline and Martin Brooks, learning occurs when we construct meaning and understanding of our experiences. The greater our experiences and the relationships we make of them, the more complex our thinking capability.

Construction of meaning is the natural function of the human brain. We integrate and synthesize new information into our existing understandings to make sensible meaning.

The brain appears to become more active in its search for meaning when it encounters information and experiences that fail to fit its existing patterns of meaning. You might say that the brain takes in that which it finds interesting and tries to synthesize a meaningful fit. It makes predictions about logical fits, but if meaningful fit doesn't occur, it then begins a persistent search to achieve a new understanding. Thus new and deeper learning happens. [This would be W. Edwards Deming's point as well, that's what I've come to think of as Profound learning.](#)

We encounter a new experience and interpret it to fit an existing mental model, or we create a new mental model that makes sense. Often, if there is sufficient interest, we continue to test the appropriateness of the fit.

We devise a theory, test it if it makes sense we consider it and continue to question.

Scenario 1: new information comes in and is understood and appropriately categorized to fit meaningfully with the individual's mental models.

Scenario 2: Information comes in and doesn't catch the attention or interest of the individual and sieves out.

Scenario 3: Information comes in and doesn't fit the individual's mental model and sets up a search for meaning, curiosity, theory, search for meaning, possibly new mental models.

In its search for meaning, the new experiences are passed about the brain via dendrite transfer. It may make multiple meaningful connections and is thought to result in enhancing the physical thickness of the dendrite wall itself.

The more experiences we encounter that cause us to question the right/wrong assumptions we hold, the greater the opportunity for enhancing our complex thinking ability...getting smarter and seeing our world through new eyes.

New brain research concerning how the brain actually constructs meaning and learns, has called into question our traditional thinking about learning. New thoughts:

- Information or stimuli must first catch the interest of the learner, otherwise it does not stimulate a search for meaning in the individual's brain/
- The brain forms a theory about a meaningful fit and tests for fit. If the predicted fit doesn't conform, it persists in its search for meaning.
- Multiple connections usually occur, enhancing the complexity of meaning for the individual.
- Traditional learning models with fixed learning objectives and a specific collection of logical information assembled by others, not the learner, often leads to shallow learning experiences.

Orchestrating Immersion: The richer the design, the more room for discovery and insight.

Some questions to help in designing learning friendly environments:

1. What do I want the learners to learn?
2. What do I want the learner to be able to do?
3. How can I inspire/influence the learners to become emotionally engaged in this activity?
4. How can I involve their five senses in the process?
5. How can I get emotional involvement?
6. How can I engage them with another person? Peer interaction is important.
7. How can I encourage the learners to physically move, even if it is just to make a gesture? Physical movement is important.
8. How can I increase the richness of the experience?

(Caine and Caine) Three essential ingredients for effective learning include:

1. Paying attention to the learner's biology
2. Providing an engaging experience
3. Assisting the learner in making meaning of the experience.