Modeling the Learning Process

James Zull. *The Art of Changing the Brain*  
(Sterling, VA: Stylus Publishing, 2002)
4 Basic Functions the Brain Uses for Learning

- Getting Information
- Making Meaning of Information
- Creating New Ideas
- Acting on Those Ideas
Learner *Begins* as Receiver of Knowledge
Gathering
Information Enters through Senses

• Can you remember four things that influence this gathering?
  • Interest
  • Intent
  • Basic Background (prior knowledge)
  • Understanding
Gathering takes place in the sensory cortex.
Reading Textbooks

Gathering

• You discovered:

• A system for reading textbook assignments

• You surveyed material you were responsible for and read it paragraph by paragraph
Analyzing to Make Meaning

REFLECTION

• Try to make personal
• Try to determine connection to past experiences
• Try to discover relevance and usefulness
• Try to discover what it's like that we already know.
Analyzing takes place in the Back Integrative cortex
Reading Textbooks

Analyzing

• You analyzed your notes
• Analyzed each paragraph
• Wrote questions in the margin
• Looked for connections
Creating
Convert comprehension to

• Ideas
• Hypothesis
• Plans
Reading Textbooks
Creating

• You reflected and reviewed your marked text and questions
• Predicted possible test questions involving higher level thinking skills.
• Looked for connections with notes you had taken in class.
Creating Takes Place in the front integrative cortex
Acting Testing Ideas

- Writing
- Speaking
- Drawing

Can you think of other ways?
Acting Takes Place in the Motor Cortex
Reading Textbooks

Acting

• You developed:
  • Summary sheets
  • Maps
  • Power Points
  • Practice Tests
Learner becomes

Producer of Knowledge