Connecting Neuroscience and Education

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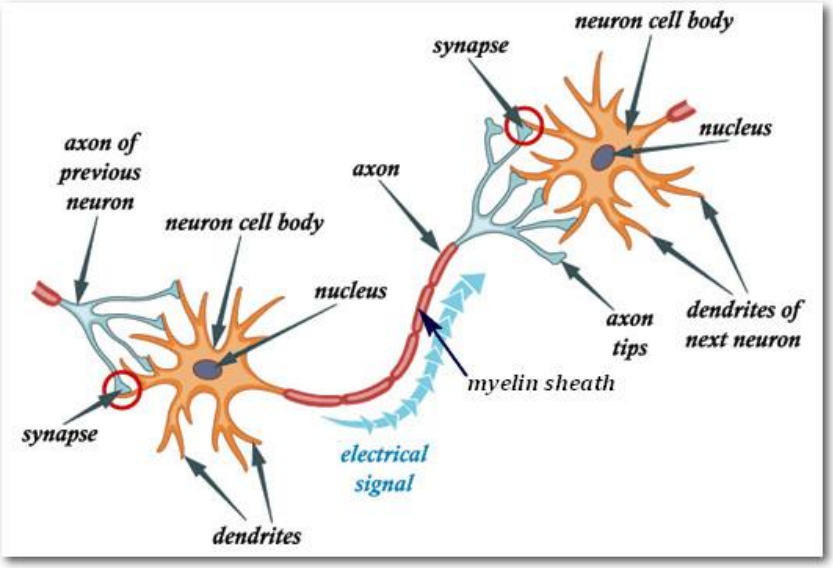
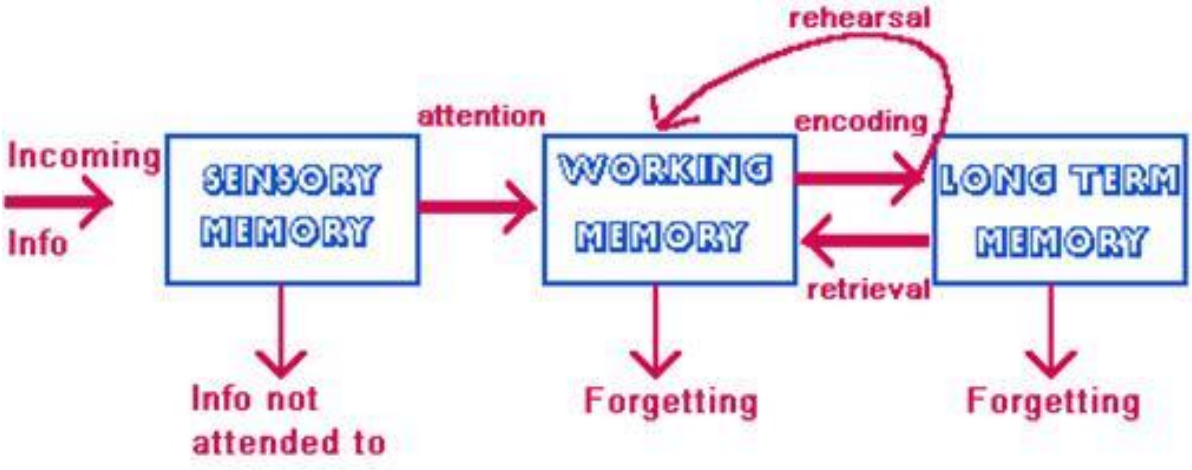
As educators we know certain practices help students learn and retain information. Taking a closer look at neuroscience and how the brain works provides support for many practices we use, but can also be used as a resource to improve instruction and the student's study cycle.





The student's learning experience should:

1. Grow dendrites.
2. Increase the thickness of the myelin sheath on the axons.
3. Create a strong and lasting network between neurons (memory).
4. Produce helpful neurotransmitters and avoid amygdala hijacking.

MSU-Moorhead Developmental Mathematics' Course Cycle

Class meets 4 (or 5) days per week; 2 large group days + 2 (or 3) small group days.

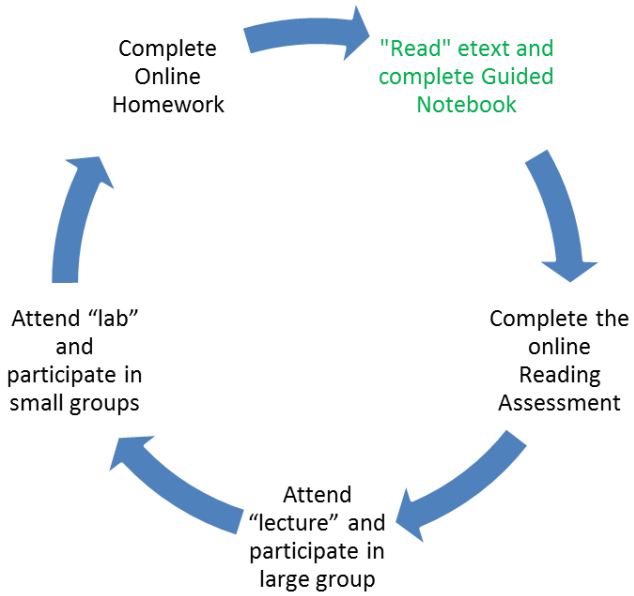
MSU-Moorhead
Developmental Mathematics Options

MDEV090 Elementary Algebra
(4 days/week)

MDEV090A Elementary Algebra + supplementary small group
(5 days/week, new Fall 2015)

MDEV099 Intermediate Algebra
(4 days/week)

MDEV095 Elementary/Intermediate Algebra (5 days/week)



The learning experience should:

1. Require participation and interaction.
2. Encourage effort but offer assistance when needed.
3. Provide constructive and immediate feedback.
4. Involve a variety of learning experiences to encourage recall and relearning.
5. Incorporate practice in multiple formats.

Helpful and interesting resources:

- National Research Council. (2000). *How People Learn: Brain, Mind, Experience and School.* Washington, D.C.: National Academy Press.
- Sousa, David (2011). *How the Brain Learns.* Thousand Oaks: Corwin, A SAGE Company.
- Willis, Judy (2006). *Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher.* Alexandria: Association for Supervision and Curriculum Development (ASCD).
- Willis, Judy (2010). *Learning to Love Math: Teaching Strategies That Change Student Attitudes and Get Results.* Alexandria: Association for Supervision and Curriculum Development (ASCD).