Attention, Sleep & Learning

The effects of poor technology use and brain function
Partial Attention Inhibits Deep Thinking & Learning

Partial attention can take many forms: multi-tasking, techno interruptions, sleepiness, “habit mode” rather than “declarative mode,” stress, etc.
Brain Functioning

- **Shallow learning**—the type that occurs during partial learning, distraction and emotional stress—stimulates a different part of the brain than deep memory learning.

- **Deep learning** molds the brain differently and leads to learning “flow,” motivation, strong memory (enhancing short term and long term memory), creative thought, patience in problem-solving.

- Over time young and adolescent brains are molded by repeated shallow learning or repeated deep learning.
Multi-tasking

1. **Synthesizing multi-tasking can be good**: doing several related tasks to solve a single complex task.

2. **Distracting multi-tasking** interrupts deep cognitive processes: writing a paper while receiving IMs, doing math assignments while socializing on the phone, trying to comprehend new material in a text while watching TV, etc.

   *When the interruption is emotionally charged, it can take 20 min. to return to original focus.*

   *The less complex the task the less effect on the cognitive process.*
Techno interruptions & sleep

- Youngsters and teens need 8-9 hours of uninterrupted sleep for proper brain functioning including memory consolidation.
- Computer screens and bright lights reduce secretion of melatonin which naturally brings on sleep.
- Poor sleep = poor performance
- Sleep deprivation leads to partial attention, shallow learning, moodiness, impatience, impairment of short term and long term memory.
- It takes 7 days to recover completely from lost sleep.
Sleep Health

- Create sleep patterns: consistent bedtime, preparation rituals, sanctity of uninterrupted sleep.
- Avoid computer and bright light use a half hour before sleep time.
- Computers should be in family community rooms, not in bedrooms.
- Cell phones and lap tops in bedrooms after bedtime welcome sleep interruptions.

(Place recharging stations in kitchen, not in bedrooms.)
Awareness leads to self-regulation…

- Young students can not self-regulate due to brain maturation.
- Parents need to regulate technology use and sleep patterns until student is ready for self-regulation. (May not be until late teens or longer…)
- Discuss the “why” but continue parent regulation of good habits.
In our new technological world old adages remain viable…

- “Give it your undivided attention…”
- “Early to bed, early to rise makes a man healthy, wealthy and wise…”
- “Don’t sit so close to the screen…”
- “Don’t get the kids wound up; it’s almost bedtime!…”
- “Sleep on it…”
References

- Laurel A. Graves & Allan I. Pack of Penn's School of Medicine, Penn undergraduate Elizabeth A. Heller. “Sleep Deprivation Within Five Hours of Learning Impairs Memory Consolidation…” Science Daily July 2003.

PP compiled by Kathy Taylor