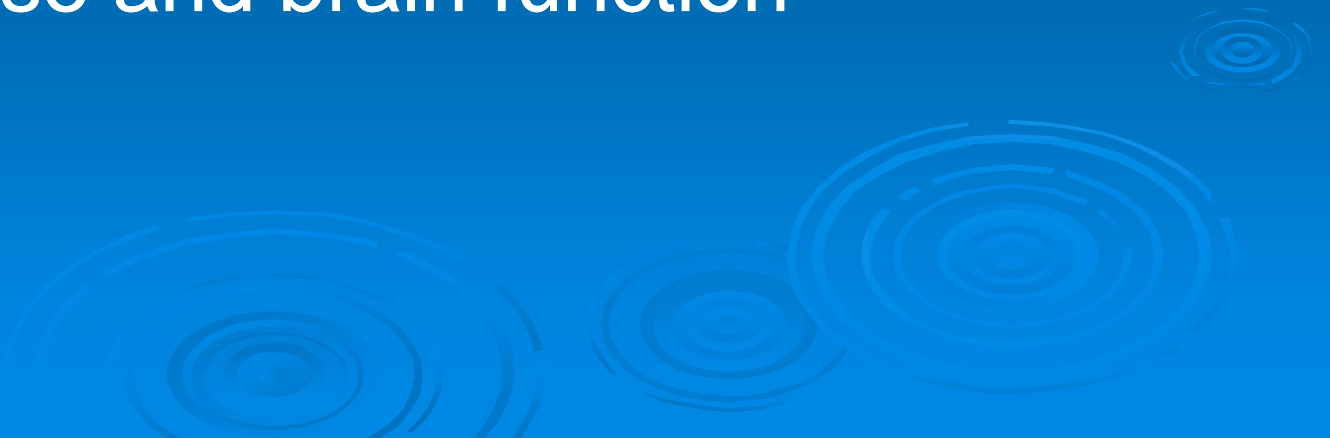


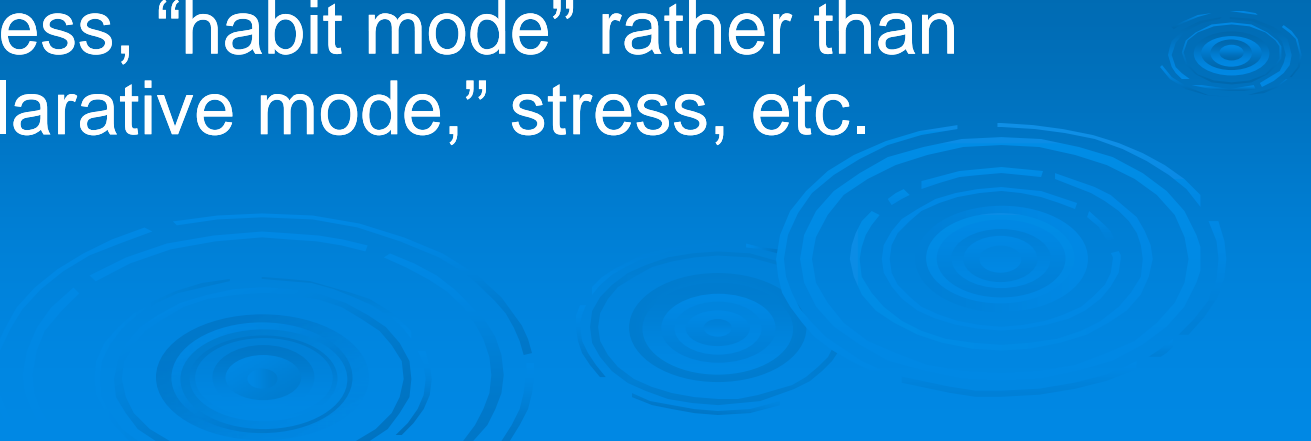
Attention, Sleep & Learning

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.

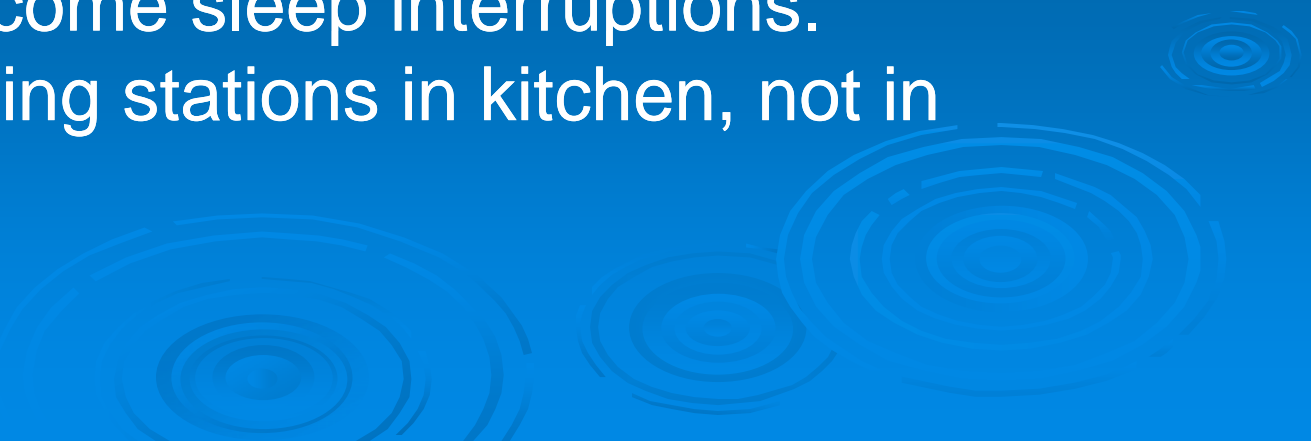
Multi-tasking

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.)
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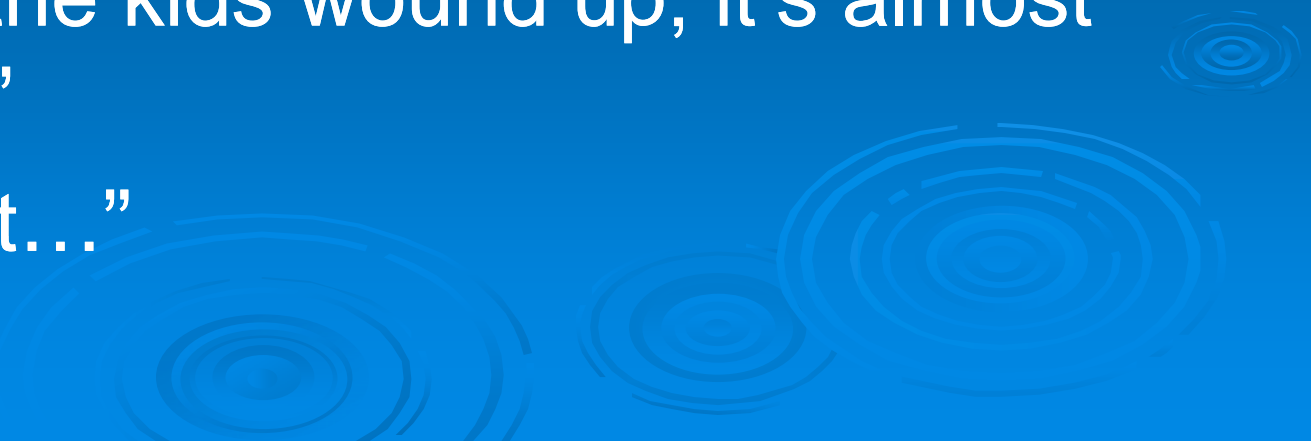
Awareness leads to self-regulation...

- 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...”
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References

- K. Bradley, Ph.D & J. Brakeman, Ph.D. INMAX workshop “Techno-Multitasking, Sleep, Learning and Performance” June 2009.
- 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.
- David Miller. “Sleep Deprivation & Learning” *High School Psychology APA* 2009.

PP compiled by Kathy Taylor