Thinking About Thinking…Improving Productivity by Taking Control of the Brain

Neuroscientists are learning that people do have the ability to rewire their brains and improve focus and productivity. It seems that thinking about how we think is a good move.

The Information Age is forever identified as a period of information overload. Technology has advanced rapidly over the last thirty years, bringing with it non-stop distractions, multitasking, and mental exhaustion. It is likely that almost all employees at every level of the organization will spend some part of the day trying to accurately complete a single job task without much success, while also accepting cell phone calls, retrieving text messages, and reading emails. The problem is the brain took millions of years to develop but has had thirty years to adapt to a confusing, technology-based environment that is constantly changing. Neuroscientists are learning more all the time about the neuron-based circuitry in the brain and are discovering that people do have a large amount of control over its functioning. Once viewed as a block box that "does it own thing", the brain is being redefined as a complex environment that can be retrained to improve productivity at work.

Dr. Marcus E. Raichle, Professor of Radiology, Neurology, and Anatomy and Neurobiology at Washington University in the St. Louis School of Medicine was a pioneering scientist who discovered that 60-80 percent of the brain's energy usage could not be linked to external events or mental activities. Certain parts of the brain were most activated when nothing was going on. His discovery of the default-mode network (DMN), a section of the brain that organizes memories and plans for future activities or events, opened up a whole new path of research. DMN was discovered in the late 1990s, and since then a significant amount of research on the brain's functioning and energy usage has occurred. A long, complex path of discovery by many brain scientists led to the idea that people can improve productivity, job performance, and focus by paying attention to how they process information.

Brain Overflow Impedes Productivity

David Rock summarized much of the brain research to date in the book, Your Brain at Work: Strategies for Overcoming Distraction, Regaining Focus, and Working Smarter All Day Long (HarperCollins Publishers, 2009). Simply stated, the brain's capacity can be exceeded. Society applauds people who multitask, but a manager designing a project, answering a cell phone, responding to text messages, checking emails, and thinking about work or personal problems, all at the same time, is overloading the brain. The frequent distractions, multiple

tasks, and wandering thoughts lead to work errors and slow down the ability to complete the project.

The prefrontal cortex manages problem solving and decision-making. It is the source of consciousness and holds the internal thoughts generated by the brain. When decisions must be made based on external activities, like scheduling the sequence of activities in a project, the brain must find the resources to manage both internal and external driven thoughts. It is energy draining…literally…because the brain uses glucose and oxygen as its fuel.

Not Enough Brain Space

The average brain can hold four complex items at a time. The manager working on the new project is dealing with multiple major concepts like scheduling and meeting client needs, while also dealing with constant distractions and personal issues. The prefrontal/frontal cortex is overworked and has no space or energy left for prioritizing, recalling deep memories, processing new ideas, making future plans, or problem solving. People attending meetings, feeling their cell phones vibrating in their pockets, and wondering who is calling, are not paying attention to the presentations because the brain is already doing everything it is biologically capable of managing.

The fewer items held in the brain, the better. One solution is to stop juggling too many ideas and learn to sequence and focus on them one at a time. To do this, compare ideas, prioritize them, and deal with them by starting with the most important. Managers jumping from one project to another, or tackling decisions by dealing with every aspect of it all at the same time, create traffic jams in the brain. Demanding people to rapidly process too much information is overloading multiple sections of the brain, including those dealing with short-term memory, language, long-term memory, and even motor skills when answering a smartphone. Managers allowing too many thoughts to bottleneck in the brain will find they go over the same thoughts repeatedly because there is no space available for decision-making.

The old adage "simplify, simplify, simplify" comes to mind. Successful business persons have the ability to break down complex ideas into a set of manageable concepts. They compare two concepts at a time and make decisions based on the comparison. Ideas put on hold are brought forward one at a time, accommodating the human brain working in serial time. However, the ideas held in storage are occupying frontal cortex space until pulled out or embedded in long-term memory. It is true that some activities become rote through repetition, reducing the amount of brain energy needed to complete them.

Controlling the Flow of Ideas

Neuroscientists still have a lot to learn about brain functioning, but there is some advice already emerging. First, avoid information bottlenecks by ordering how information is processed. Make a conscious decision to bring each idea or thought to conclusion by deciding how much attention is allowed at the moment. If the cell phone is distracting, turn it off. If a project seems unwieldy, prioritize the steps and focus on each one until a decision is made. Slow down the thought process to stop jumping from one idea to another. When multitasking, make sure it is a mix of one idea requiring active thinking and one that is embedded in long-term memory and automatic.

It is also important to manage distractions. When distracted or not doing anything, the default-mode network activates. Thoughts turn inward, making people lose external focus. When reading a text message or answering an email, it is difficult to stop forward momentum, and attention remains focused on the wrong thing. Interestingly, much of this seems like it should be intuitive. We know when we are distracted, making errors, taking too long on projects, and mentally exhausted. Now the neuroscientists are proving the science behind the "why."