



TIPS ON HOW TO THINK MORE EFFECTIVELY

How to think more effectively

1. First, to ensure your brain is at its thinking best, you should get enough sleep. Sleep plays a vital role in maintaining memory, which is made up of patterns and their inter-connections derived from past experience.
2. To access focused thinking, pay attention to something specific and that mode activates. For example, Silver wanting to make stickier glue back in 1968. As you focus on the problem at hand, your brain will draw on associations you've stored before. Beware though, since being in focused mode can also cause you to under-focus on or ignore less obvious information.
3. In diffuse mode you connect patterns you've stored but not yet linked. You may suddenly see things in new ways. Focus hard on the problem, for example, the 1968 problem of finding a use for repositionable glue (that association which seems so obvious now!), Then, turn your attention to other things. The answer may pop up when you least expect, for example when you wake in the middle of the night, under the shower or out on a jog.

How do a key and bearing balls link to genius breakthroughs?

Today's briefing focuses on how to use your brain effectively, so what better way to start than with a puzzle. How is the thinking of creative geniuses in their own fields, artist Salvador Dali and engineer Thomas Edison, linked by a key on a ribbon and ball bearings?

If you choose to tackle the problem, then you'll use two ways of thinking about it. One way is to focus intently on the problem, in the here and now. Rather unsurprisingly, this is known as focused mode thinking.

Another way of thinking is to clarify the problem in your mind and then move on to other things, where you're not even thinking about the original problem. You may also choose to restate the problem in your mind, just before you go to sleep, but leave it at that. This second mode of thinking is diffuse mode thinking. Let's look at each in turn.

Focused mode thinking

Although everyone uses both modes of thinking, focused mode thinking gets a lot more attention. It's without a doubt the predominant style of thinking espoused and developed during school years. Initially, that's because schooling is about individuals growing a repertoire of increasingly complex concepts. Regular testing checks on ability to recall a specific group of concepts and, perhaps, apply them in ways that are tightly linked with the context in which they were taught. Some concept areas resurface annually, becoming more detailed and sophisticated over time.

Business also frequently demands focused thinking, especially when there are time pressures. Since 'time is money', those pressures are common. A problem arises and needs fixing. This is most often accomplished by focusing intently on the problem, with the amount of focus directly proportional to its cost implications. A really expensive problem may warrant many people spending a lot of time trying to solve it as quickly as possible.

Engineering professor and author of best seller 'A Mind for Numbers', Dr Barbara Oakley, points out that your brain enters focused mode thinking as soon as you turn your attention to something specific. Oakley uses the analogy of the old-style pinball machine to clarify the concept.

When your brain focuses on something, it's as if a spring-loaded plunger shoots a ball onto a pinball table filled with rubber bumpers. The rubber bumpers are arranged quite close together and, for some time, the ball bounces between nearby bumpers. These bumpers represent small, adjacent slivers of information that are tightly linked together to make a larger, more complex 'chunk'.

Chunking is key to efficient storage and retrieval of memories. The stronger the association between stored memories, a consequence of focused thinking, the easier and more likely it will become to retrieve related pieces of information (sub concepts).

Diffuse mode thinking

Now, back to the pinball analogy to examine the other mode of thinking. Think of a pinball table where there are fewer bumpers on the table than before and they're also spread quite far apart from one another. When you launch the ball it travels much longer distances between the bumpers. With each bounce, it also moves to quite different points on the table compared with the small area it covered when the bumpers were close together. This represents diffuse mode thinking, where previously unrelated concept suddenly link.

According to Oakley, diffuse mode thinking tends to be bigger picture thinking. It connects concepts that are initially not tightly connected, as they are in focused mode thinking. For example, Dr Spencer Silver, the chemist who created Post It Note glue, failed in his focused thinking quest for a super-strong adhesive. Despite trying intently to think of a way to use what he created, he also failed to win attention for the glue in 3M for more than 5 years. That was until a colleague, Art Fry, had trouble with the bookmarks in his choir hymnal falling out some 6 years later. Fry remembered Silver's glue and used it to successfully move and restick his bookmarks without damaging the book. Even then 'Press and Peel', launched in 1977, wasn't an overnight success. But, after a relaunch as 'Post It Notes' in 1980, it rapidly became one of the most popular office products in the world.

Silver's inability to come up with an alternative use for his failed adhesive is a classic case of focused mode thinking. He and others just couldn't conceptualise an alternate use. In contrast, Fry's thinking some years later is classic diffuse mode thinking. While singing in the church choir, a world away from his 3M day job, he had the falling out bookmark problem and a sudden 'aha' that Silver's glue might just be the go. While not focusing on how to exploit Silver's weak glue, Fry connected the concepts of problem bookmark and problem glue!

The link between a key, bearing balls and genius breakthroughs

And that brings us back to the key, the bearing balls and Dali and Edison. [If you'd sort of forgotten, then the problem could already be benefiting from nonconscious, diffuse mode thinking.] It turns out that the brain state between waking and sleeping delivers excellent opportunities for diffuse mode thinking. Dali used to hold a key on a ribbon as he prepared to enter this mode. Edison held bearing balls. As they fell asleep, the held item dropped noisily to the floor, woke them and allowed access to their very creative and sometimes breakthrough diffuse mode thoughts.