Further Discussion: Critical Thinking and Idea Generating Tools

**Edward de Bono**, born May 19, 1933, is a physician, inventor, and author. He is a proponent of the deliberate teaching of thinking as a subject in schools and wrote the book, [*Six Thinking Hats*](http://en.wikipedia.org/wiki/Six_Thinking_Hats), which discusses the process and tools for critical thinking.

*Excerpt From a Wikipedia article on Linear Verus Lateral Thinking:*

“[Critical thinking](http://en.wikipedia.org/wiki/Critical_thinking) is primarily concerned with judging the true value of statements and seeking errors. A person uses lateral thinking to move from one known idea to creating new ideas. [Edward de Bono](http://en.wikipedia.org/wiki/Edward_de_Bono) defines four types of thinking tools:

* Idea generating tools that are designed to break current thinking patterns—routine patterns, the [status quo](http://en.wikipedia.org/wiki/Status_quo)
* Focus tools that are designed to broaden where to search for new ideas
* Harvest tools that are designed to ensure more value is received from idea generating output
* Treatment tools that are designed to consider real-world constraints, resources, and support

**Random Entry Idea Generating Tool**: The thinker chooses an object at random, or a noun from a dictionary, and associates it with the area they are thinking about. For example, if they are thinking about how to improve a website, an object chosen at random from the environment around them might be a [fax machine](http://en.wikipedia.org/wiki/Fax_machine). A fax machine transmits images over the phone to paper. Fax machines are becoming rare. People send faxes directly to phone numbers. Perhaps this could suggest a new way to embed the website's content in [emails](http://en.wikipedia.org/wiki/Email) and other sites.

**Provocation Idea Generating Tool**: The use any of the [provocation techniques](http://en.wikipedia.org/wiki/Po_%28lateral_thinking%29)—wishful thinking, [exaggeration](http://en.wikipedia.org/wiki/Exaggeration), reversal, escape, distortion, or arising. The thinker creates a list of provocations and then uses the most outlandish ones to move their thinking forward to new ideas.

**Movement Techniques**: The thinker develops provocation operationsby the following methods: extract a principle, focus on the difference, moment to moment, positive aspects, special circumstances.

**Challenge Idea Generating Tool**: A tool which is designed to ask the question "Why?" in a non-threatening way: why something exists, why it is done the way it is. The result is a very clear understanding of "Why?" which naturally leads to fresh new ideas. The goal is to be able to challenge anything at all, not just items which are problems. For example, one could challenge the handles on [coffee cups](http://en.wikipedia.org/wiki/Coffee_cup). The reason for the handle seems to be that the cup is often too hot to hold directly. Perhaps [coffee](http://en.wikipedia.org/wiki/Coffee) cups could be made with insulated finger grips, or there could be separate coffee cup holders similar to [beer](http://en.wikipedia.org/wiki/Beer) holders.

**Concept Fan Idea Generating Tool**: Ideas carry out concepts. This tool systematically expands the range and number of concepts in order to end up with a very broad range of ideas to consider.

**Disproving**: Based on the idea that the majority is always wrong (as suggested by [Henrik Ibsen](http://en.wikipedia.org/wiki/Henrik_Ibsen) and [John Kenneth Galbraith](http://en.wikipedia.org/wiki/John_Kenneth_Galbraith)), take anything that is obvious and generally accepted as "goes without saying", question it, take an opposite view, and try to convincingly disprove it. This technique is similar to de Bono's "Black Hat" of the [Six Thinking Hats](http://en.wikipedia.org/wiki/Six_Thinking_Hats), which looks at the ways in which something will not work.”