According to the Oxford English dictionary, **Lateral Thinking** is “…a way of thinking which seeks the solution to intractable problems through unorthodox methods, or elements which would normally be ignored by logical thinking.” Edward De Bono differentiates this from **vertical thinking**, which can be described as traditional, logical thought; vertical thinking looks at a reasonable view of a problem or situation and works through it, generally in a path of least resistance. On the other hand, Lateral Thinking suggests that the student or problem solver should explore different ways of examining a challenging task, instead of accepting what appears to be the solution with seemingly the most potential and going forward. De Bono is not opposed to vertical thinking; he sees Lateral Thinking as complementary (each make the other more effective).

De Bono has indicated that the difference between Lateral Thinking and vertical thinking can be expressed in several ways: alternatives (think of many ways beyond the obvious approach), nonsequentiality (jump out of the frame of reference or work from several points and link them together), undoing selection processes (think outside of logical progression into pathways that might seem wrong), and attention (a shift in the direct focus of concern).

De Bono believes that Lateral Thinking can be taught directly. He has suggested a number of techniques that can be learned to further Lateral Thinking: random input from external sources (thus influencing the older relationships), set a fixed allocation of alternative approaches before proceeding with a further step, attention rotation (divides a problem up into parts so that one part does not create monopoly of attention), cross-fertilization (what another person “sees” may be a fresh and dissimilar approach), reversal of direction (in looking at the question). While some people may be better at or more natural to Lateral Thinking than others, de Bono points out that this is also true in mathematics or other subjects; people can improve by being taught this concept (directly) and making it into a resident skill.

Lateral Thinking is clearly seated in the cognitive domain. Although de Bono’s theory purposely strays from purely linear or rigid thought, Lateral Thinking is “thinking about thinking” in a non-emotional sense. This theory wishes to extent the breadth (or width) of the considerations within a solution space and, thus, to create the possibility of better solution paths. De Bono states that Lateral Thinking has relations to insight, creativity and humor; the difference is that Lateral Thinking is meant to lead the way into purposeful methods. For example, the concept of humor can be linked to Lateral Thinking. When someone says something funny, it is because they “turn” a phrase or we are led down a seemingly normal path but with a very unusual or unexpected end result (a situational oscillation); yet, humor (by itself) does not put forward ways to resolve a question or issue.
Is Lateral Thinking merely the same thing as creative thinking? De Bono would say no; while Lateral Thinking may be a creative process, it is not meant to part of the chaos of some creative thinking but is directed towards emerging with new ideas. Lateral Thinking strives to get to an objective end point while certain acts of creativity are bound by subjective judgment.

As described by de Bono, the specific instruction of the Lateral Thinking view would be inside an isolated curriculum. Regarding this, De Bono stated: “To set aside a definite period for teaching Lateral Thinking is much more useful than trying to gently introduce its principles in the course of teaching some other subject”; further, de Bono has created an industry from the instruction of his principles. Nevertheless, once knowledge of Lateral Thinking exists, the act of Lateral Thinking could cross domains and disciplines while performing problem solving activities. De Bono has even suggested that one hour/week during the educational process may be adequate to infuse Lateral Thinking.

Students are tasked to create new mental outlooks and those must be internalized; the teacher may provide an initial problem set, but the students are free to suggest them, too. The students may work alone or together in this framework. Although de Bono’s approach is to find solutions, the learners or problem solvers would not discount other suggested paths (there is no “no”; judgment is delayed; there may be hidden, useful information in a pathway labeled as invalid). This does not suggest that there is any specific emphasis on inter/intrapersonal relations; the difference is that Lateral Thinking should instill a new mindset. Once Lateral Thinking is introduced and cognitively implemented, the emphasis would be to use the theory throughout future work.

De Bono is not alone in describing different ways of “creative” thought. Max Wertheimer’s Gestalt theory intends for the performer to get through perturbations by talking a macro view of a problem. Similar to de Bono, Irving Maltzman’s Originality theory supposed that a person’s originality could be amplified through practice in constructing unique results. (I should note that Leon Festinger’s theory of Cognitive Dissonance must play a role in Lateral Thinking.) The difference between these is that de Bono is not looking for a macro view, but is peering at individual components of a problem; also, Lateral Thinking is not delving into sparking originality as much as it is inducing certain constructs of thought. Rather than built specifically into a curriculum, de Bono urges that this be should be taught external to general subject areas (with an obvious spill-over effect into general cognition).

Certainly, Lateral Thinking could be applied to both general and specific applications in all fields (physics, mathematics, political science, social system, education) where we are trying to solve non-rote undertakings (e.g., problems with fuzzy or unknown answers). Lateral Thinking would not be helpful in situations of fixed knowledge (e.g., 1+1=2) nor would it be helpful in critical time-constrained problems where the problem solvers are unfamiliar with the Lateral Thinking concept.
Type of Learning

<table>
<thead>
<tr>
<th>Memorize Information</th>
<th>Apply Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand Relationships</td>
<td>Apply Generic Skills</td>
</tr>
</tbody>
</table>

Control of Learning

- Teacher Centered
- Student Centered

Focus of Learning

- Interdisciplinary
- Topic
- Problem
- Domain

Grouping for Learning

- Individuals
- Pairs
- Teams (3-6)
- Groups (7+)

Interactions for Learning

<table>
<thead>
<tr>
<th>Human</th>
<th>Nonhuman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student-Teacher</td>
<td>Student-Student</td>
</tr>
<tr>
<td>Student-Tools</td>
<td>Student-Information</td>
</tr>
<tr>
<td>Student-Environments/Manipulative</td>
<td>Other</td>
</tr>
</tbody>
</table>

Support for Learning

- Cognitive Support
- Emotional Support
Selected References

Books

WWW:

Selected articles or items of general interest
Cui Bono? (can thinking be taught separately from knowledge?). (1989). *The Economist (US)*, 312(7615), 75-76.
*What is lateral thinking?* (2002). de Bono Institute. [Brief description.]

Books that show how solutions are solved using different lines of thought: