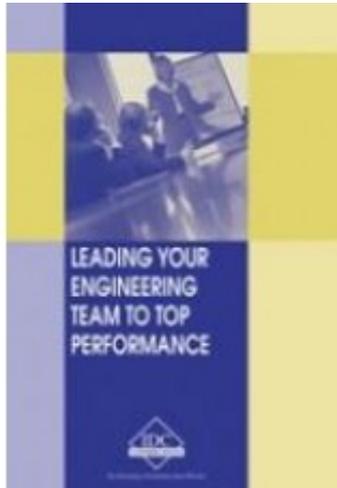# LE-E - Leading Your Engineering Team to Top Performance

Price: $139.94

Ex Tax: $127.22

Short Description

One of the great truths of life is our interdependence. Everything we accomplish within a company is through the efforts of people working together. No matter how technologically advanced we are, especially in the engineering world, we have to work together effectively as a team, and effective teams are made up of effective members.

Description

One of the great truths of life is our interdependence. Everything we accomplish within a company is through the efforts of people working together. No matter how technologically advanced we are, especially in the engineering world, we have to work together effectively as a team, and effective teams are made up of effective members.

Unfortunately, engineers and technical professionals are notoriously bad at working together in teams and this manual introduces you to the basic and critical team skills which will enable you to make a much greater contribution to the success of your engineering team.

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Radiant Thinking

  1. **Radiant Thinking**

What is Radiant Thinking?

Radiant Thinking

by Flemming Funch, 17 Jan 1995.

Minds do not naturally work in straight lines. Rather they consist of associations radiating out (or in) from many different connection points. Many connections in many different directions connect items together. We could say that the mind is simply a network of connections or associations.

You can see this in the layout of the brain. The brain is not the mind, but it can be seen as a physical reflection of the structure of the mind.

The brain consists of billions of neurons that each extend hundreds of dendrites that connect with other neurons. It is an association machine with an astronomical number of possible associations.

A neuron could be regarded as a point from which associations go off in all directions. And where ever we get to, we get to another neuron with associations going off in all directions. We can keep associating around endlessly. There is not necessarily any particular start or finish to it, and no identifiable sequence to it, in that it is happening in billions of channels at the same time.

The mind works in a similar fashion. One naturally thinks in radiant associations. No matter what one thinks of, there would be associations going off in a multitude of directions from it. And wherever any of those associations take us, we can again find a multitude of associations going off from there.

Creativity and problem solving will flow most smoothly when allowed to work freely and radiantly.

Minds that have been repressed, forced, tricked or indoctrinated into working in unnatural ways will likely have various kinds of trouble. Lack of creativity, poor memory, low intelligence, confusion, limitations, etc.

Minds might in various ways have been imprinted with certain "correct" ways of thinking. That is very often simply limited, fixed ideas imposed by misunderstanding or by overwhelming experiences in life.

Minds are freed up by expanding what was limited, by connecting up what was separate, by providing many options where there were few, by letting flow what was stuck.

Most people are trained to think in a linear way, thinking of one thing, then the next thing, and then the next, in a series of singular associations in one direction.

The way our minds *really* work is in multiple thoughts and multiple directions at the same time. ***The way the brain fundamentally thinks is radiant, meaning that it thinks primarily from image centres, and then radiates out***.

We've been trained in two primary intelligences--verbal and numerical, however, we've not been trained as much in the creative and innovative. To maximise function, the verbal, numerical, creative, and innovative skills must go together.

The Mind Map allows you to use your verbal and numerical, plus adding the explosive power of your creative intelligence. We need to realise that, regardless of how we've been *taught* to think, inside our brains we've been training since birth to create Mind Maps!

The Disadvantages of Standard Notes

1. They obscure key words. This prevents the brain from making appropriate associations between the key concepts.
2. They make it difficult to remember. Monotonous single color notes are boring. Most notes look like lists.
3. They waste time by encouraging or requiring unnecessary noting, reading and rereading unnecessary notes, and searching for key words.
4. They fail to stimulate the brain creatively. Linear presentations prevent the brain from making associations, thus counteracting creativity and memory. Reading a list implies an `end' or `finish' whereas a mind map encourages the brain to build on existing thoughts and ideas.

The advantages of Mind Mapping versus linear note-making include:

- The time saved by noting only relevant words is between 50 and 95%
- The time saved by reading only relevant words: more than 90% of total
- Time saved reviewing Mind Map notes: more than 90% of total
- Time saved by not having to search for key words amongst unnecessary verbiage: more than 90% of total
- The concentration on real issues is enhanced
- The brain finds it easier to accept and remember visually stimulating, multi-coloured, multi-dimensional Mind Maps, rather than monotonous, boring linear notes
- Whilst you are Mind Mapping, you are constantly on the verge of new discoveries and realisations which encourages a continuous flow of thought
- The Mind Map works in harmony with the brain's natural desire for completion or wholeness

Tony Buzan, a world-renowned authority on brain research, developed the Mind Mapping method to unlock the brain's untapped potential. He found that the brain maps information in multi-dimensional, non-linear, and visual pattern structures.

Maps can range from simple to complex and can be used for a variety of purposes: generating ideas, organizing information, communicating concepts and collaborating on projects.

Consider the problem of "What are some alternative uses for a paper clip"

If you started to write a list, you would become bored and would probably slow down. Alternatively, a mind map allows building on previous ideas, attributes, or stepping stone ideas.

Mind Mapping

Mind Mapping is a highly effective tool that introduces you to very simple techniques that enhance the ordering and structuring of your thinking. This in turn assists you in radiant thinking and lateral problem solving.

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purposes: generating ideas, organising information, communicating concepts and collaborating on projects.

The full power of the Mind Map is realised by having a central theme and by using images wherever appropriate rather than words. Combining the two cortical skills of words and images multiplies your intellectual power, especially when you create your own images.

Once the human brain realises that it can associate anything with anything else, it will almost immediately find associations and this means that any Mind Map is potentially infinite.

A classic study done in 1969 demonstrated the importance of hierarchies in an aid to memory. Generating ideas with a mind map is much easier than making lists, because key words or "Basic Ordering Ideas" can be used as triggers. Linear notes in the form of lists directly oppose the workings of the mind, in that they generate an idea and then deliberately cut it off from the preceding and following it.

Summary of the Mind Map Laws

Techniques

    1. Use emphasis

- Always use a central image
- Use images throughout your Mind Map
- Use three or more colors per central image
- Use dimension in images
- Use synaesthesia (the blending of the physical senses)
- Use variations of size of printing, line and image
- Use organized spacing
- Use appropriate spacing

    2. Use Association

- Use arrows when you want to make connections within and across the branch

  pattern
- Use colours
- Use codes

3. Be Clear

- Use only one key word per line
- Print all words
- Print key words on lines
- Make line length equal to word length
- Connect lines to other lines
- Make the central lines thicker
- Make your boundaries `embrace' your branch outline
- Make your images as clear as possible
- Keep your paper placed horizontally in front of you
- Keep your printing as upright as possible

4. Develop a personal style

Layout

1 Use Hierarchy

2 Use numerical order

 TASK: Why are we learning about Radiant Thinking as an Introduction to this Workshop?

Hint: For Mind Mapping Software, the following links may be useful:

http://www.visual-mind.com

http://www.mindjet.com/eu/

The Value of Teamwork

Fostering teamwork is creating a work culture that values collaboration. In a teamwork environment, people understand and believe that thinking, planning, decisions and actions are better when done cooperatively. People recognise, and even assimilate, the belief that "none of us is as good as all of us."

In 1998 a survey initiated by 3M showed that only 21% of work done, was done as part of a team. Asked this question more recently in 2005, the same people indicated that close to 50% of work done, was now done as part of a team. That is a 250% increases over the last decade.

What this tells us is that work styles are changing. More work is being done in teams. Reasons for this include changes to company structures and shifting of decision making down to the lower levels of the organisation.

Business structures in many instances are also requiring that employees wear many more hats and assume many different roles.

"The days of one person working within the comfortable bounds of an isolated, well-defined domain is almost ancient history. We are all performing multiple roles, and we must work with other people to create a whole." *Begeman (2005)*

We need to recognise that it is difficult to control all the resources available to us and of course it is difficult to exercise complete control over others. As a role model this means if you want something to change, you must change!

This being the case, we have no choice but to re-invent our own behaviour and skills in order to ensure our employees, our teams and our departments succeed.

Every Manager, Supervisor or Team Leader must become skilled at doing more with others if they are to ensure they remain employed in the emerging knowledge economy.

Creating The Culture of Teamwork

To make teamwork happen, these powerful actions must occur.

1. **Leaders communicate the clear expectation that teamwork and collaboration are expected.**No one completely owns a work area or process all by himself. People who own work processes and positions are

open and receptive to ideas and input from others on the team.

2. **Managers and Team Leaders**model teamwork in their interaction with each other and the rest of the organsation. They maintain teamwork even when things are going wrong and the temptation is to slip back into former team unfriendly behaviour.

3. **The organisation members talk about and identify the value of a teamwork culture**. If values are formally written and shared, teamwork is one of the key five or six.

4. **Teamwork is rewarded and recognised**. The lone ranger, even if he or she is an excellent producer, is valued less than the person who achieves results with others in teamwork. Compensation, bonuses, and rewards depend on collaborative practices as much as individual contribution and achievement.

5. **The Performance Management system places emphasis and value on teamwork**.

TASK - Group Exercise: List 10 benefits of team work

Your teams are most effective when:

- a diverse group of employees is able to participate,
- you limit the number of teams on which any one employee may participate
- the teams establish a regular meeting schedule,
- you require periodic team goal setting,
- minutes or notes are posted from team meetings or projects, and
- teams self-perpetuate by regularly adding newer employees.