

51 TOOLS FOR TRANSFORMING YOUR TRAINING

KIMBERLEY HARE
AND LARRY REYNOLDS

51 Tools for Transforming your Training



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51 Tools for Transforming your Training

Bringing Brain-Friendly Learning to Life

KIMBERLEY HARE AND LARRY REYNOLDS

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Contents

Introduction	1
Part One: Principles of brain-friendly learning	7
How to use Part One of the manual	9
Brain-friendly learning from the outside in	10
Brain-friendly learning from the inside out – your amazing brain!	13
Keep it real!	19
Facilitate creation not consumption	22
Honour uniqueness	25
Make it rich and multisensory	32
State is everything (well . . . almost!)	40
Part Two: Brain-friendly design	47
An overview of the design process	49
The five principles and design	56
Part Three: Tools for brain-friendly learning	67
Mind Map® overview of brain-friendly tools	69
Tools for keeping it real	71
1 Compelling goals	73
2 Set up and set down	75
3 Real projects	77
4 Real-life learning activities	81
5 Rave review sessions	83
6 A warm welcome pack	85
7 Energizing endings	86
Tools for facilitating creation	89
8 Mindblowing Mind Maps®	91
9 Contracting for success	94
10 Keep the ball in the learner's court	95
11 Creation not consumption	96
12 The power of questions	97
13 Associative learning	99
14 Crystal-clear instructions	102
15 First and last gets remembered	104
16 Chunking	106
17 Integration smorgasbord	108
18 The Disney strategy	114
19 The flexible facilitator	117
20 Brain-friendly beliefs about learning	120
21 Trapping your beliefs	122
22 Generative learning	126

Tools for honouring uniqueness	129
23 Two modes of processing	131
24 Different angles – 4-MAT	132
25 Multiple intelligences	134
26 Inspiring and engaging all the intelligences	140
27 Developing your own intelligences	143
28 Meta-programmes	144
Tools for making it rich and multisensory	147
29 An environment that says 'you matter'	149
30 Dressing the learning environment	152
31 Multichannel VHF	158
32 Magical metaphors	163
33 Stories and anecdotes	165
34 Unconscious learning	168
35 Mnemonics	171
36 Rhythm and rhyme	172
37 Humour	173
38 Breaks	176
Tools for managing state	179
39 Positive expectations	181
40 Rapport	187
41 Flow	195
42 Let's get physical	198
43 Brain gym	201
44 Music	203
45 Nourishing the brain	209
46 Anchoring	212
47 Existing anchors	215
48 Installing your own anchors	217
49 Learning from criticism strategy	218
50 Changing the state of the group	220
51 Sizzling states at your fingertips!	222
References	225
Further resources	226

Introduction



We want you to take away from this manual a rich smorgasbord of ideas, tools and practical strategies you can apply in your own particular situation. If brain-friendly learning is new to you, we can reassure you that you are joining a growing number of facilitators, consultants and coaches who share a common interest in how to bring the best in learning to the business community. And, of course, there is still much waiting to be learned.

More than a set of techniques

Brain-friendly learning (BFL) is not about techniques and gimmicks. It is far more than just putting on baroque music or playing fun games. It's a movement rather than a method. A movement to recover the real joy of learning – combining sizzle *with* substance – and helping people become even more outstanding at the work they have chosen to do.

Brain-friendly learning requires a profound belief in the joy, the wonder and the possibilities of human learning.

If you have any questions about this manual, you can e-mail us at:

questions@kaizen-training.com

and we'll reply to you as soon as we can. We'll look for common themes and incorporate them into the frequently asked questions of the next edition of this manual.

What is this manual all about?

Training has come a long way in recent years. Gone are the days when an instructor stood at the overhead projector and droned on for hours on end. These days you're much more likely to see participants taking part in activities that involve them moving around a training room which is full of colour and life. The air is fresh and there's a buzz of activity. There is lots of laughter, and maybe music is playing in the background. People are interacting, asking questions, suggesting answers and taking notes.

Of course, just because a training course is filled with fun and activity, it doesn't necessarily guarantee more learning. It's possible to have the sizzle without the substance. In fact, one of the reasons why trainers are put off accelerated learning is because they try to incorporate the razzamatazz without taking care to ensure that the activity supports, rather than distracts from, the learning.

We believe that learning events can be enjoyable *and* full of significant and long-lasting learning. We call this approach brain-friendly learning – it is learning designed to be in harmony with the way in which our brains work.

Designing training events which are both enjoyable and full of powerful learning requires considerable skill and expertise, and there are a number of ways in which you can develop this expertise. You can use trial and error. Effective in the long run, but very slow. You can hang around with very experienced trainers and copy what works. Again, effective, but you may not have the time or the opportunity to do this. Or you can use this manual . . .

This manual is designed to enable you to learn how to design and deliver brain-friendly learning. It is designed to be used, not just read. Here's how it works.

Part One, 'Principles of Brain-friendly Learning' will help you understand the philosophy of BFL. It's a common misconception that BFL is just a series of techniques – ordinary training which is somehow spiced up with a bit of music and movement. BFL is a different way of thinking about learning. Find out more in Part One.

Part Two, 'Brain-friendly Design', gets right to the heart of the matter; if you are designing a learning event from scratch, how do you do it? We've studied the best trainers, teachers and facilitators of learning, and we've identified a common pattern in the way they design learning events. Learn how you can use this pattern in Part Two.

Part Three, 'Tools for Brain-friendly Learning', consists of 51 tools you can use to make any learning event brain-friendly. Some of them may already be familiar to you, and many will not. The idea is that, each time you lead a learning event, you can dip into this part of the manual, and find another good idea for making it even more effective and even more brain-friendly.

You'll notice some common elements running through this manual:

- There are chunks of text and diagrams which explain the concepts of BFL. You are reading one such chunk right now!
- There are 'brain boxes' which explain why a particular concept or tools makes sense in terms of the brain. You'll find one of these just below this text.
- Finally, and perhaps most importantly, there are two kinds of activity. Some are designed to help you understand a particular concept in more detail. Others are designed to apply the concept to learning events that you are facilitating.



Brain box: Big picture overview

How can we understand something as complex as the human brain? Somebody once said: 'If the brain were so simple that we could understand it, we would be so simple that we couldn't!'

Your brain contains about 100 billion brain cells or neurons. Each neuron is linked to up to 10 000 other neurons. The more frequently neurons communicate with each other, the stronger the connections become – in the same way that the more frequently people walk across a patch of grass the more definite the path becomes.

Learning is the creation and strengthening of connections between neurons. The stronger the connection, the more permanent the learning. That is why repetition generally helps learning.

Another way to help learning is to give a big-picture overview, before going into all the details. It's almost as if the big picture overview gives a kind of scaffolding on which to hang the rest of the learning. In neurological terms, it's easier to create new connections if there are some good connections already in place. In most learning events, it's helpful to begin with an overview of the whole subject matter rather than plunging straight into all the details – and, of course, that's what we're doing in this introduction.

This manual is aimed squarely at people who organize learning events in a business context. You might be called a trainer, a consultant, a learning and development manager or one of many other names. You might organize training courses, distance learning, coaching sessions, computer-based training or any other kind of learning activity. For reasons which are explained in Part One of this manual, we will use the terms 'facilitator' and 'learning events'.



Activity: Troubleshooter

Use this troubleshooter to identify your priorities in using this manual.

Statement	Relevant sections of this manual	Page
1. I need to improve 'transfer of learning' back to the job	Keep it real!	19
2. I need to raise the credibility of training by finding better ways of linking learning to real business results	Keep it real!	19
3. Participants need more compelling personal learning goals for a particular training event	Keep it real!	19
4. I'd like tools to enable us to design learning experiences more quickly and elegantly	Designing brain-friendly learning – Part Two	47
5. I'd like more ways of raising the energy and motivation levels of my groups. Our courses need more 'sizzle'	State is everything Part Three, 'Tools for Brain-friendly learning'	179
6. Our designs need to take more account of individual learning styles and preferences	Honour uniqueness	129
7. I'd like our designs to be more participative	Facilitate creation not consumption	22
8. Our training environment needs to become more conducive to learning	Rich and multisensory	32
9. I'd like to rediscover my own passion as a trainer – things are feeling a bit 'stale'	State is everything Part Three, 'Tools for Brain-friendly learning'	179
10. I want to understand the implications of the latest research into how brains learn	Part One, 'Principles of Brain-friendly Learning'	7



Brain quiz

Note: The answers to this quiz are all contained within this manual.

1. What can increase milk production in cows, change brainwave patterns, relieve pain, entrain biorhythms, alter hormone levels, reduce stress and increase learning by engaging the limbic system?
2. How many brain cells (neurons) does the average human being have? (Give or take a few!)
a) 100 000 b) 1 million c) 100 million d) 100 billion
3. How many brain cells is a 12-week old human embryo developing per second?
a) 20 b) 200 c) 2 000
4. According to Professor Petr Kouzmich Anokhin, how many potential connections are there between neurons in the brain?
5. Acetylcholine is important for booting up the brain, transmitting signals, and long- and short-term memory. Name one common food that allows your body to make this amino acid.
6. The following have all been used as metaphors for the brain. Which one most reflects current thinking?
– A city switchboard
– An enchanted loom
– A computer
– A rainforest jungle
– A hydraulic system
7. Match these three parts of the triune brain with their corresponding main focuses:
Neocortex Limbic/mid brain Reptilian brain
Survival Quest for novelty Hunt for pleasure
8. Polish-born Mihaly – the University of Chicago professor who has spent his life researching 'flow' states. Spell his last name!
9. List the ten kinds of intelligence identified by Professor Howard Gardner.



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PART ONE

Principles of brain-friendly learning



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How to use Part One of the manual

Part One of the manual will help you understand what brain-friendly learning is all about.

The first section, 'Brain-friendly learning from the outside in', contains concepts and activities which demonstrate that nineteenth-century models of education and training may not be the most appropriate for the twenty-first century.

The second section, 'Brain-friendly learning from the inside out', takes you on a journey into the most complex structure in the universe – your amazing brain.

The remaining sections enable you to explore in detail the five principles of brain-friendly learning, which are:

- Keep it real!
- Facilitate creation not consumption
- Honour uniqueness
- Make it rich and multisensory
- State is everything (well . . . almost!).

Brain-friendly learning from the outside in

What is brain-friendly learning? It's a philosophy, a movement and a wide variety of learning techniques for making learning (and the design of learning) faster, more fun and more effective.

Brain-friendly learning is based on the way in which people naturally learn, and seeks to recover the joy in learning that is missing for many people.

The nineteenth and twentieth centuries gave us many great gifts, but it also gave us the following models and paradigms:

- the factory model – assembly lines and compartmentalization
- the teacher as 'expert'
- behaviourism and rat psychology (reward and punishment systems) – the 'teacher' provides the stimulus, the learner learns the appropriate responses
- paternalism and bureaucratic control
- over-reliance on cognitive, 'left-brain' learning processes
- competitive approaches to learning and assessment.

All of these have left their mark on the way in which learning is designed, delivered and evaluated.

Now that we've arrived at the twenty-first century, it's time for a new paradigm.

Brain-friendly learning seeks to restore learners to the openness, flexibility, joy, sense of community and whole-bodied intelligence they had as children.







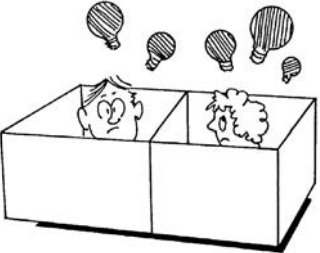
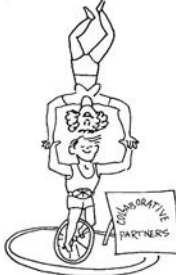
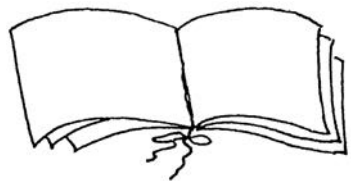
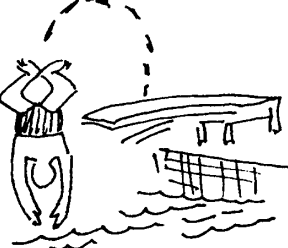
Brain-friendly learning environments tend to be positive, colourful, option-rich, collaborative, warm, multisensory and experiential.



Activity: Disease and cures

Look at the pictures overleaf showing what we believe are the five major 'diseases' of traditional training down the left-hand side, and the corresponding 'cures' on the right.

Make some notes in the middle column about what these pictures mean to you.

THE DISEASE	MY NOTES	THE CURE
		
		
		
		
		

By the way, this activity also serves to demonstrate an excellent brain-friendly learning technique – that of asking learners to ‘make sense of’ relevant pictures and images, rather than just reading lots of text. How can you use this technique? What content might be ‘understood’ better by images or graphics?

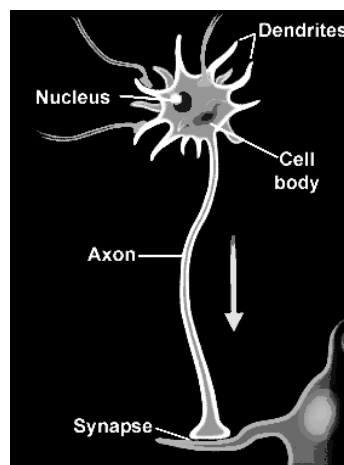
Theoretical underpinnings

Brain-friendly learning has evolved from integrating a whole range of developments in our thinking and culture:

- *The latest brain research.* This has thrown into question many of our assumptions about learning – for example, we now understand much more about the role of the emotions in learning and memory.
- *Our post-industrial culture.* We now require less ability to store and memorize information – there is much more emphasis on the ability to think, collaborate, innovate and create value out of information.
- *Howard Gardner's challenging work on multiple intelligences*¹ – and the desirability of engaging all of these to inspire better and more lasting learning.
- The rise of *emotional intelligence (EI or EQ)* as a critical factor in business or personal success.
- *Powerful advances in approaches to personal change and development* – such as neuro-linguistic programming.
- *The 'experience economy'*.² Consumers now expect and deserve a rich, memorable and emotionally involving experience just as much when they are 'learning' as when they are enjoying a family holiday.
- *The decline of behaviourism* as the dominant psychology in learning, and the rise of more humanistic and holistic approaches.
- *Research into learning styles* – one size does not fit all. The work of David Kolb,³ Honey and Mumford⁴ and Bernice McCarthy,⁵ amongst others, all point to the important differences in the way people prefer to learn.

Brain-friendly learning from the inside out – your amazing brain!

- Your brain weighs about three pounds and is no bigger than a grapefruit, but it is more complex than any other known structure in the universe.
- The neuron is the primary building block of the brain: neurons carry electrical charges and make chemical connections to other neurons. Axons are long fibres that extend from the cell body and transmit messages. Dendrites are the short fibres surrounding the cell body that receive messages. Synapses are the tiny gaps between axons and dendrites that use chemical bridges to communicate.
- You have about 100 billion brain cells or neurons (give or take a few!). As it grows in the womb, a 12-week old human embryo is developing about 2000 brain cells a second!
- Compare this with an adult bee, which can do some pretty sophisticated things, such as building a honeycomb, calculating distances and communicating with other bees, and has a total of 7000 brain cells. (That's the number of brain cells grown by a human embryo in about three seconds!)
- The total potential number of connections between cells, if written out, has been estimated at 1 followed by 10.5 million kilometres of noughts! There are more connections in the human brain than there are atoms in the universe!
- Learning has been defined as the establishment of new synapses, or the strengthening of existing ones.



- Learning and memory are based on the number of connections you have and how often you use them. Through repetition, nerve cells become connected and myelinated to recall information easily. Without occasional review or usage, the myeline begins to dissolve . . . *Use it or lose it!*

- Note the following proportions of different kinds of neuron:
 - sensory neurons (perceive stimuli) <10 per cent of total
 - motor neurons (control behavioural responses) <10 per cent of total
 - interneurons (process information, detect patterns and make meaning) >80 per cent of total.

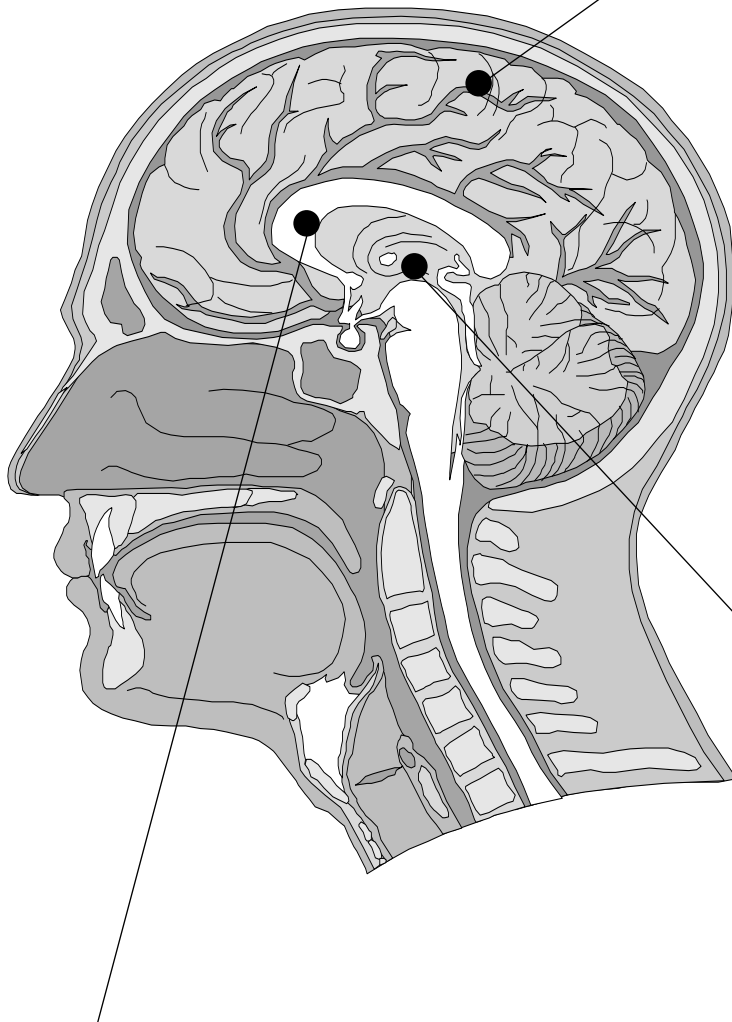
These proportions strengthen the central principle of brain-friendly learning that training should not be about 'giving information' but rather about encouraging the making of meaning. After all, the original Latin meaning of education, '*educare*', meant 'to draw forth'. Learning must be active. It must involve making meaning, not merely memorization.

- The mind-body connection is now a proven scientific fact. At a deep level you have the ability to communicate with every single cell in your body.



The big news is that intelligence is not fixed.

Not one brain ... not two brains ... but three brains!



NEOCORTEX AND CEREBRUM

Comprises 80 per cent of brain.
'Thinking Cap'. Includes frontal, occipital, parietal and temporal lobes.

Wraps around the limbic brain.

Sorts messages from senses (via the limbic brain) resulting in:

- ◇ reasoning, reflection and cerebral thinking
- ◇ problem-solving and decision-making
- ◇ reading, translating and composing
- ◇ language, writing and drawing
- ◇ voluntary motor control.

KEY DRIVER: QUEST FOR NOVELTY

BRAIN STEM/REPTILIAN BRAIN

Comes up from spinal cord.

Monitors the physical world.

Instinctive, fast-acting and survival-oriented.

- ◇ dominates in fight or flight response.

Controls:

- ◇ sensory motor functions
- ◇ survival and protection
- ◇ reproduction
- ◇ territoriality and ritualistic display
- ◇ social and mating rituals (e.g. top dog).

KEY DRIVER: SURVIVAL/AVOIDING HARM

LIMBIC BRAIN/MID-BRAIN

Contains amygdala, hippocampus, thalamus, hypothalamus and pineal gland.
Surrounds reptilian brain.

- ◇ distributes messages from five senses.

Processes:

- ◇ emotions and feelings
- ◇ pleasure and attention
- ◇ long-term memory
- ◇ biorhythms – sleep, thirst and hunger
- ◇ sexual drive, heart rate, immune system and hormones
- ◇ social bonding
- ◇ what is 'true' and valid.

KEY DRIVER: HUNT FOR PLEASURE

The component parts of the brain



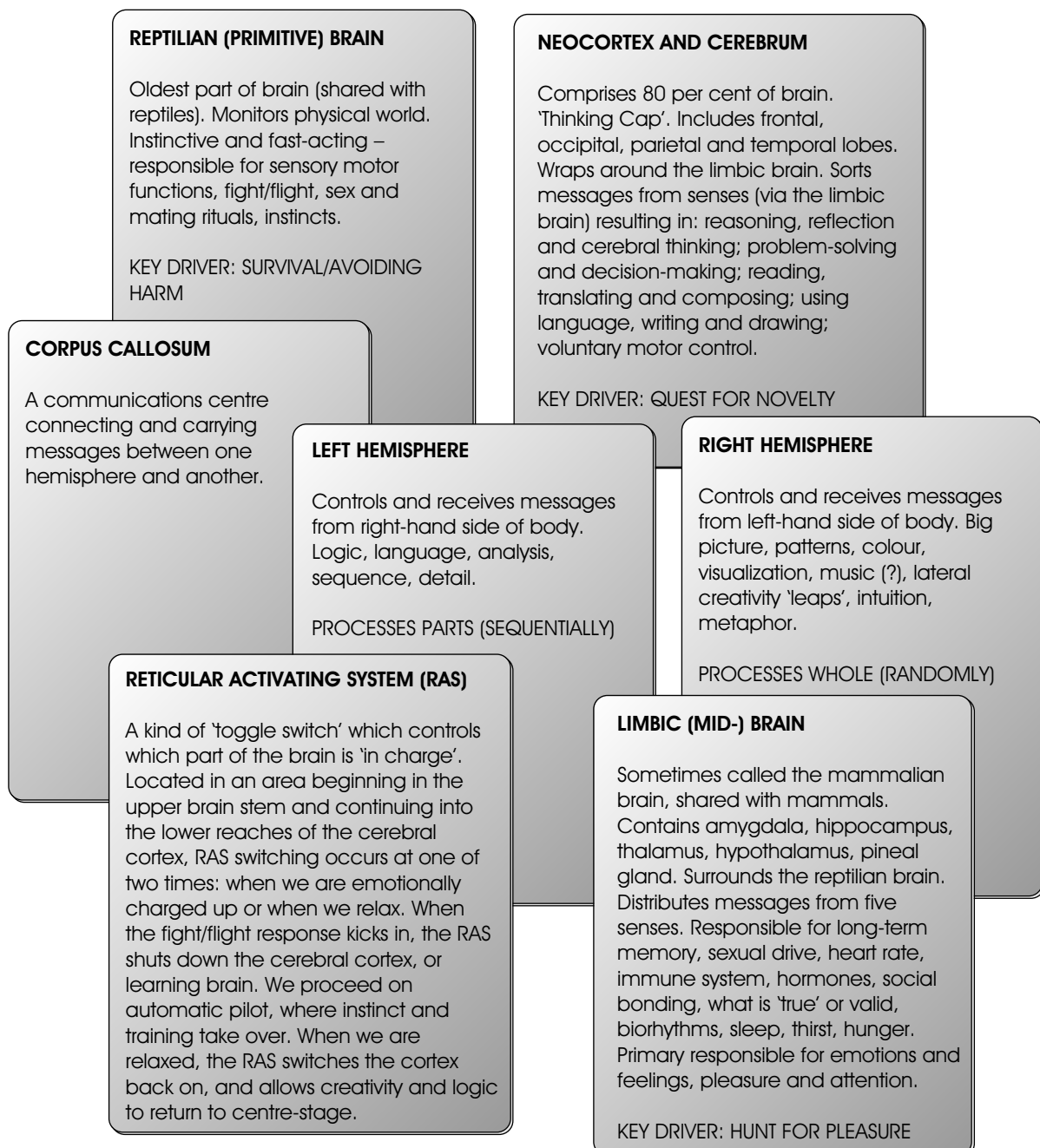
Activity: Remembering the component parts of the brain

You'll remember these component parts of the brain more easily if you:

- read each 'card' and find out what each part does
- think of a sound or noise that you would associate with each part
- think of an action that encapsulates that part of the brain.

In our brain-friendly learning workshops, we have different people 'being' the different parts of the brain and then the whole group 'builds' a brain at the front of the room – each making the sound and the action.

Now make the sound and do the action as you read the information.





Activity: So what?

Given what we know now about the human brain, what are the key implications for facilitators and designers of learning?

Key Implication 1

Key Implication 2

Key Implication 3

Given the above implications, what are three actions you could take to improve the way you design and deliver training in your organization?

Action 1

Action 2

Action 3

Now compare your thoughts with ours.