Training Guidelines

CREATIVE THINKING

IN LITERACY & LANGUAGE SKILLS

Contents

Preface

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This set of guidelines is designed to facilitate the teaching of key creating thinking principles and methods. It has been conceived as a tool aimed at teachers and teacher trainers, with the intention of ultimately supporting and enabling teachers that are responsible for the creation of innovative and engaging learning and teaching resources.

While the primary teaching audience identified through the project is teachers and teacher trainers, working within the subjects of literacy and foreign languages, the guidelines are sufficiently flexible to be adapted for use in a wide range of subjects. Indeed the principles and methods can even (and perhaps should) be taught to students of all ages, as they will have tasks that are equal in their need for creativity as any teaching and learning resource.

The fundamental premise of the guidelines is that teachers that are confident in developing original ideas and challenging current methods and practices, as part of an evolutionary (or revolutionary) process, will benefit from the structure and guidance that this resource brings to the subject. It seeks to demonstrate that far from being a form of alchemy or other elusive art, creative thinking is achieved through the understanding of a relatively

small number of key building blocks that can be assembled in a wide range of permutations. The guide also seeks to demonstrate through the range of activities offered, that these building blocks are tangible and attainable, available to all that choose to implement them within their creative strategies.

The Creative Thinking In Literacy & Language Skills team hope that you find value in the resource presented, and show a willingness to expand and further develop the ideas presented to work within your own creative context.

Introduction to creative thinking & teaching creative thinking

When setting out to teach Creative Thinking you should be prepared for a number of fairly common responses, which may initially present some problems to completing the task.

The first response is likely to be based on a disbelief that creative thinking is something that can be taught and indeed learnt. Many people believe that creativity is an innate gift that some are blessed with, while others are less fortunate. Some of the people you teach will consider themselves to be part of this 'blessed' group.

We can only deal with the first response (or doubt) relating to 'learning to be creative' by demonstrating the concept in practice. This should be achieved early in a workshop by engaging learners in some simple and relatively quick exercises, that are likely to lead to unconventional responses. As a facilitator you will be responsible for leading your learners to develop more creative (or at least alternative) responses to problems.

The second typical response, which is that for those that consider themselves to be creative already, there is little to gain from attending a creative thinking workshop themselves.

In many cases these people will believe themselves to be creative based on previous experiences. It is not for us to doubt them, as many people do demonstrate creativity in many situations and with some regularity. However, many creative people have difficulty in defining or explaining their processes for achieving creative outcomes. Often the method(s) of creative thinking is ill-defined or even illusive. As this training guide is based on presenting named and demonstrable methods for increasing creative thinking, quite often the creative people will accept that perhaps there is something of value to learn, even if it is offering them a more structured process or simply providing terms for their own processes.

The reality is that what is learnt is often far more than this, but to begin with getting everybody onboard is your objective.

There are some interesting and supportive theories from a number of esteemed individuals, that relate to the notion of teaching and learning creativity, as well as 'unlearning' creativity. You may wish to share some of these ideas with your learners during the early stages of your workshop(s).

The British educationalist Sir Ken Robinson is a firm believer that quite often creativity is 'taught out' of people as they grow, as many of our education systems demand an efficiency that often leads to prescribed 'right' answers, the same answers that everyone else has.

You can hear a range of Robinson's views in his almost legendary lecture entitled 'How schools kill creativity'.

He argues in this lecture that children are more prepared 'to take a chance' even when they do not know the 'right' answer, on the basis that children are less concerned about being 'wrong'.

He adds that being wrong is not the same as being creative, BUT (and most importantly) he states that if we are not prepared to be wrong we will never do anything original, definitely something to think about.

Robinson often interchanges the words 'original' and 'creative', based on his definition of creativity being 'original thinking...with purpose'. This use of interchangeable terms is something else worth sharing with your learners, if only to ensure they do not internally over complicate the relatively simple concept of creative thinking.

The idea of 'preparing to be wrong' is another really important point to make with your learners / trainees. While it may sound like a simple concept, you should keep in mind that many of your learners will have developed their lives and careers on a series of 'right' answers or decisions. Finding the quickest and most efficient route to a solution that works has often been reinforced in schools and work lives, even when the resulting solution is the same solution that everyone else arrives at. Therefore being 'wrong' is a concept that some people will struggle with, as it requires ignoring many long-held ideas about progress and success. It can be made even less comfortable for individuals by working with others in a group situation. Despite this you should attempt to teach creative thinking in groups, for reasons that are covered later in the training guide.

For now it is worth acknowledging the heightened stimulation in peoples' thinking when working with others, alongside the potential to conjoin with and develop on the ideas of others.

You should keep the following points in mind when dealing with learners adjusting to the preparedness to be 'wrong'.

During any activities you should always attempt to make light of or avoid focusing on suggestions / responses that in other contexts may be deemed to be 'wrong'. You should instead focus on the quantity of responses far more than the quality or success of responses, at least until your learners have become comfortable and accepting of not having success with every response or suggestion.

As an additional thought on dealing with potential objections, it is always worth reminding people that learning is defined by developing knowledge and / or skills previously unknown or unpracticed.

Albert Einstein offers a very succinct reminder of the need for a willingness to adapt our current position to progress in anything we do. His offering is a definition of insanity:

'Doing the same thing over and over again and expecting different results'.[1]

Taking a slightly different approach to our ability to be more or less creative, is the prolific author on the subject of creative thinking, Edward De Bono. De Bono recognises and supports the idea that we must be prepared to be wrong to be creative (not that we will always be wrong) but with this he also acknowledges and promotes a formality or deliberateness to the practice of creative thinking - forcing creativity.

Vertical thinking V lateral thinking

De Bono talks about two distinct types of thinking, which as an introduction to the subject should serve as a useful starting point for your workshop.

Vertical thinking is what De Bono describes as the type of thinking we engage in most of the time. It is about making decisions based primarily on what we already know to be right, and normally in the same way that anyone else would, offering a high degree of certainty or predictability. In a process based task one step follows another in a predictable sequence (think about changing the wheel on a car or completing a jigsaw puzzle). The objective is often to get to the end point in the most efficient way or in the least amount of steps.

Lateral thinking (which is completely synonymous with 'creative thinking') is not focused on the fastest route to the endpoint, but rather it is focused on generating more, and perhaps more interesting routes to the endpoint. In fact its primary aim is to generate new ideas or new ways of doing things, based far more on probability than certainty.

We can look at these two types of thinking side by side to see their differences, though it is worth keeping in mind that neither is superior and that we need to exercise judgment on which type of thinking to apply, depending on the situation. Imagine getting though a day if you only applied lateral thinking. Similarly imagine trying to arrive at creative ideas / solutions if you only applied vertical thinking, in which all of the results were already known to you.

Vertical thinking	Lateral (creative) thinking
Sequential: one 'right' step leads to the next 'right' step	Non-sequential – we may need or want to take 'wrong' steps
Analytical	Provocative
Relevant content	Content is not necessarily relevant
Finite (absolute)	Probabilistic (based on probability)
Selective: once we make a choice we discount all other choices	Generative: our aim is often to generate multiple choices, particularly those that did not exist before

[1] Albert Einstein. BrainyQuote.com, Xplore Inc, 2015. http://www.brainyquote.com/quotes/quotes/a/alberteins133991.html, accessed October 5, 2015.

In a workshop situation it is normally enough to introduce this concept of opposites to your learners via a short discussion and presentation of the above table, as most people will grasp the fundamental differences. It has a greater value as you develop subsequent concepts through demonstration / activities, at which point you may need to ask if your group are exercising 'vertical' or lateral 'thinking' within an appropriate situation. Being creative will definitely require some intensive lateral thinking practice.

Returning to the hypotheses of De Bono (in fact many creative thinking theorists support these same ideas) you can ask your learners to consider and discuss the following ideas:

- Creative thinking is something that can be learnt
- But like other skills it requires practise
- It requires an 'attitude' of commitment (which may not always be present in the beginning)
- There are certain procedures that we can follow that will enhance our creative output

For some people the final statement above may seem a little counter-intuitive. Some people ask how they can be creative if they are simply following 'rules'? It is something that can (and perhaps should) be openly discussed.

Indeed the answer to this question comes in two parts. The first is that the creative thinking methods you will work with are not strictly 'rules'. Most often they are suggestions or very broad guiding principles that help us to generate new ideas. They are there to be changed, adapted, stretched, challenged etc. to suit the current situation. If they are 'rules' then they are very flexible rules designed to serve the user.

Secondly we have to recognise that if we applied creative thinking (or lateral thinking) methods on their own, we would likely end up with a chaotic collection of ideas that are never tested against their functional objectives (usefulness). As we have seen earlier, vertical and lateral thinking approaches are required to achieve 'original thinking ... with purpose' (as Sir Ken Robinson puts it). Therefore a certain amount of structure afforded by a formal process ensures we maximise our creative efforts and remain on task.

Forcing creativity

Another concept of creative thinking that is important to communicate to your learners early in the workshop(s), is the need to formally engineer situations that effectively force creative (or at least alternative) thinking. This is generally considered to be a key principle of creative thinking.
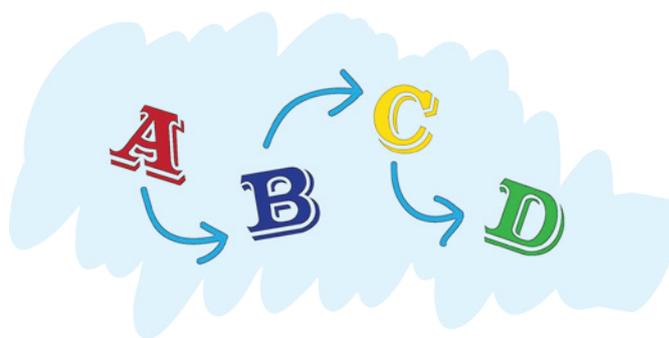

When someone encounters a problem or a challenge to overcome, they will typically follow a fairly predictable thinking process, though this may happen very quickly. This is to consider the context of the situation and the need and to relate this to any past similar experiences, drawing on the experience and knowledge of how such a situation was previously resolved. Quite often 'an' answer or solution will emerge in the mind of the person and the situation is resolved, as before. We might call this the 'first idea' model, which for many people is the default position. It is important to note that in most situations this is acceptable and functional based on its predictability.

However, to ensure that someone is really stretching and challenging their creative abilities and generating new and original responses, if that is the intention, it is generally accepted that some routines or methods are used to take them beyond this 'first idea' model.

The good news is that through this training guide we will introduce you to a number of such routines and methods, that when employed will actually force creative thinking.

The following sections set out a number of key creative thinking methods along with exercises that you can introduce to your learners / trainees. In each case the method is described and presented with examples, followed by one or more exercises to consolidate understanding and 'prove' the method.

You will seldom find 'right' answers presented in the book, as that would defeat the purpose of pursuing alternative responses / creativity. Rather you should be able to discern 'right' processes, as it is our belief that if you employ the right processes for a given situation then the required creative thinking and creative outputs will follow.
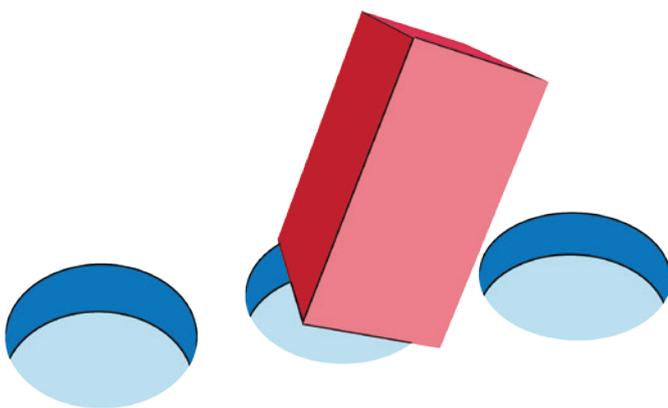
Methods for developing creative thinking: Internal influences

The generation of alternatives

The first method for you to consider may initially seem 'too obvious' to even be considered as a creative thinking tool. It is proven to be overlooked by many people who often believe that they are working creatively or employing creative thinking. Perhaps in part this is due to its simplicity and 'obviousness', once mastered at least.

The other reason it is often overlooked is that it is easy to default (or resort) to a process of vertical thinking when we are faced with a potentially creative challenge. There may be many valid reasons for this position, such as a lack of confidence, a perception of there not being enough time, fear of failure OR simply an honest ignorance to the power of this particular method.

In our experience as educators working regularly with so-called creatives from all parts of the world, I would suggest that the application of this one single method, even if no other methods are used, will have an immediate and positive impact on creative thinking and idea generation. This is a bold statement, though you may be surprised at how often it proves to be the case.

The method is simple and the clue to its function is probably already clear to you from the name. However, do not be dismissive of something because it is simple, when used properly simple things can be very effective.

When faced with a problem or challenge that you feel may be exploited through creative thinking, the generation of alternatives method demands that you generate a number of 'different' ideas before deciding which one (or selection) you take to the next stage of development. That is it!

As you can see the method can be explained very easily to your learners, though until you have demonstrated the method they may remain sceptical. The following exercise can be used to engage your learners in their first creative thinking activity of the workshop, hopefully in a way that is low risk in terms of failure or anxiety.

Present the following 'image' to your learners and simply ask them to write down what they think it is, to describe it. Following this short exercise ask your learners to share their answers with the group until you feel you have gathered the full range of answers / responses.
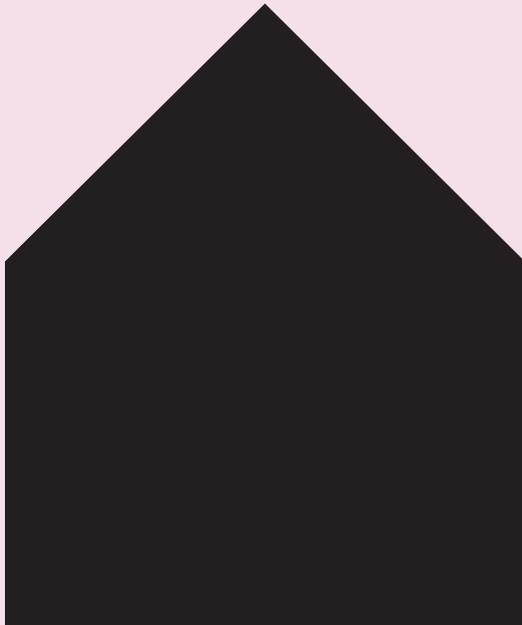
Typically the most common response is that the image represents a (simple) house viewed as a silhouette.

It is likely that your learners have answered in a way that would make sense to others, though you might now question whether or not their responses are particularly 'creative'. If the answers are all similar or very obvious you may take the opportunity to remind your learners that the point of creative thinking is to generate something original or unexpected. This kind of gentle prompt to avoid the obvious is often needed during creative thinking exercises, whether in a workshop situation or a real situation.

On occasion some answers will be creative and unexpected, which is to be celebrated. The guiding criterion for the exercise responses is

that despite how unconventional a response may be, if it makes 'sense' to others, for example they appreciate the logical connection between the description and the shape, then it is permissible.

Now repeat the exercise based on the same visual design (shape), only this time ask your learners to generate a total of 5 responses (each), with each response being quite different. Use the same criterion that the response should make sense to others, even if they are unexpected or less conventional.

While it is impossible to predict the range of responses, you will likely encounter responses that begin to see the black area as a negative space rather than a positive, as some kind of hole, tunnel entrance, or even an entrance to the home of a Gothic mouse. In its positive reading the same shape may be seen as an open envelope, an arrow, the tip of a pencil or crayon, a triangle sitting on a square, a sign, or even a schematic diagram of a space rocket.

Of course these are just examples but importantly none of them are wrong. Be prepared to congratulate your learners on the diversity of their responses, as this diversity and quantity of responses is the objective of the exercise.
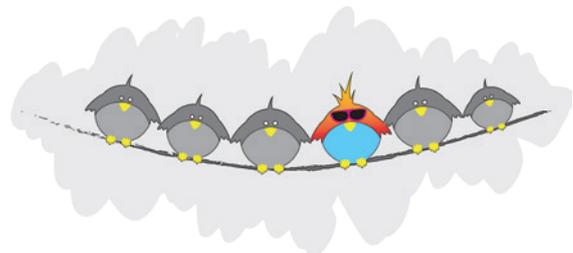
What is important in this exercise, and something that is worth pointing out to your learners, is that in most (if not all) cases the respondent has now thought of interpretations that they did not think of in the first instance. This should go some way in

instilling confidence in the capacity to develop our creative ability, notwithstanding that this is the first small step on the road to mastering creative thinking.

What this exercise offers are new perspectives, which as an outcome is the cornerstone of creative thinking in providing one or more alternative paths to explore before making a final decision on a situation. Most of the time it is reasonable for people to follow the path most travelled, but when creative solutions are required, we must be brave enough to venture down paths that we are not familiar with, and in many cases it is desirable or necessary for us to create those paths ourselves.

Returning to the demonstration exercise, with the confidence of your learners increasing based on their 'success' in the first exercise, it is advisable to capitalise on this momentum by repeating the exercise a number of times.

> Following the same process, present alternative visual stimuli. This could be in the form of another simple shape or by using other types of stimulation, such as a colour, a word, a photograph or even a sound. Attempt to exercise your own creativity in determining the types of stimuli, perhaps by forcing yourself to conceive of 5 different forms.

Different types of stimuli can generate very different responses. In the case of things like colours and sounds the reading can be very subjective or relate to symbolic interpretations. The key is that in each case participants are required to generate multiple ideas. Ensuring that the generation of alternatives is achieved can be more securely assured by employing a formal method called 'Quotas'.

Quotas

The one problem with the Generation of alternatives method is that although we may readily appreciate the need to generate multiple ideas to promote creative thinking, it leaves us with a potential issue that we really should address.

The issue is that the method on its own does not tell us how many ideas are 'enough', or when we should stop the activity. Depending on the situation there may be factors that determine this, such as the amount of time you have available. But imagine a situation where time was not such an important factor, maybe you had a week to think over a problem, how many alternatives might you generate, 10, 100, 1000?

Some people might argue that generating 1000 alternative ideas is a good thing, though I think few people would have this amount of time or commitment on a single project or problem.

UK university lecturer and branding & advertising expert Dr. Clive Colledge approaches this problem by assigning a fixed number of 30 alternative ideas. Initially this figure may shock people as it seems too high to achieve, though in practice most people are surprised at how attainable this target actually is by following a few simple rules; assuming that enough time is also available.

This approach is an example of applying a quota, though it may be useful to think of quotas in a more flexible way, rather than maintaining the same quota for all situations, more on this below.

A Quota, according to most dictionary definitions, is 'a limited or fixed number or amount ... of something in particular'. It is worth noting that a quota is normally set in advance, and for our purpose this is an essential aspect of its usefulness. You will note that asking for 5 responses in the first exercises was an example of assigning a quota.

In practice you should consider your current creative thinking task and try to determine a suitable number of alternatives to generate, to ensure that you truly stretch or challenge your thinking. Nobody said this would be comfortable!

A quota that is too low may only generate very predictable or obvious responses, while a quota that is too high may be too time consuming or simply unachievable, leaving you feeling less motivated to continue.

The approach to setting quotas is not scientific, though with a little bit of common sense and practise it is something that most people can adjust to and employ effectively.

In assigning quotas think of your responses (or alternatives) as ultimately existing under three broad headings or descriptions. These are:

- Fairly obvious responses that most people would probably think of
- Responses that are quite unexpected to others and that demonstrate an approach that is focused on creative outcomes
- Responses that may on the surface seem a little desperate or even crazy as you work hard to meet or fulfil your quota

Responses under this final heading may initially be perceived as 'crazy' or 'ridiculous' because they are so far removed from the obvious or logical responses that most people would arrive at through vertical thinking. However it is important that these type of ideas are noted and definitely not dismissed until they have been tested at subsequent stages. Remember that we are looking for a quantity of different responses in the initial stages of creative thinking, with quality judgements coming later in the process.

Also keep in mind that even if a very promising idea emerges early on in your generation of alternatives, you should continue until you have met your quota. Make this a very definite rule that is adhered to.

To test this out with your learners consider the example situations (with images) on the next page and in each case and ask your learners to try to determine a 'suitable' quota to help them develop multiple ideas. As a guide you might consider that a quota of 3 or below is quite a low number, though aiming to generate more than 12 ideas may be a challenge (but probably still achievable). Selecting a suitable quota to generate sufficient responses under each of the three headings above is something that creative thinkers will become more adept at the more times they do it.

Also recognise that you may set a quota that you meet, but still feel that you could generate more ideas to find a better solution. In which case re-set your quota and start again. The important thing is that you always meet the quota that you have set, irrespective of how desperate you seem to be in completing your list.

1. How many imaginative uses can you think of for this object?

_____

_____

_____

_____

2. How could you catch a wild squirrel without causing it any harm?

_____

_____

_____

_____

3. Can you imagine a number of things that could have possibly caused this person to be so surprised?

_____

_____

_____

_____

_____

4. Try to think of a number of humorous (funny) captions to accompany this image, the kind of thing you might see in a magazine or newspaper.

_____

_____

_____

_____

In the examples provided there is a difference in the length or detail required for each response.

For example the challenge of catching a squirrel probably requires more detail and explanation than providing a humorous caption does.

If the time with your learners is limited then work on simpler problems or those that require single idea responses. If you have more time it is worth working on some more detailed or complex problems. Generally learners enjoy these types of problems and it is a good way to develop their confidence.

After one or two of these exercises you may wish to ask your learners to work in small groups, adding a new dimension to the generation of responses.

At the end of any exercise it is important that you ask your learners to share their ideas with the wider group, providing explanations of the thinking behind each one. As a facilitator keep in mind that the objective at this stage is still to generate multiple ideas, so provide praise for this even if you personally have doubts about the long-term future of any particular idea.

Summary

At this stage your group should be gaining confidence in conceiving and discussing their ideas. Hopefully they will have belief in the principle that the more ideas you can generate, the more likely it is that you will arrive at a creative solution. If this is not yet the case you may wish to introduce more exercises to practice the generation of alternatives with defined quotas.

Some other 'problem' ideas for you to consider using:

Present a news photograph and ask your learners to generate a number of alternative headlines. You may also introduce adjectives at this stage. You could specify humorous headlines, surprising headlines, serious headlines etc.

Ask for a set number of creative ideas to tackle the problem of childhood obesity.

Tell a short story and omit the ending, asking your learners to provide you with a number of alternative endings. Again you may wish to be more specific by introducing adjectives (a happy ending, a tragic ending, a sad ending, a moralistic ending etc.)

Of course you are strongly encouraged to introduce your own problems to use as exercises, they could relate to things connected with your learners. Keep the objective of generating alternative (multiple) ideas and responses in mind at all time.

Moving forward you will need to ensure that the generation of alternatives as an integral component of all creative thinking methods is maintained. It is very easy for your learners to overlook the various methods covered as new methods are introduced.
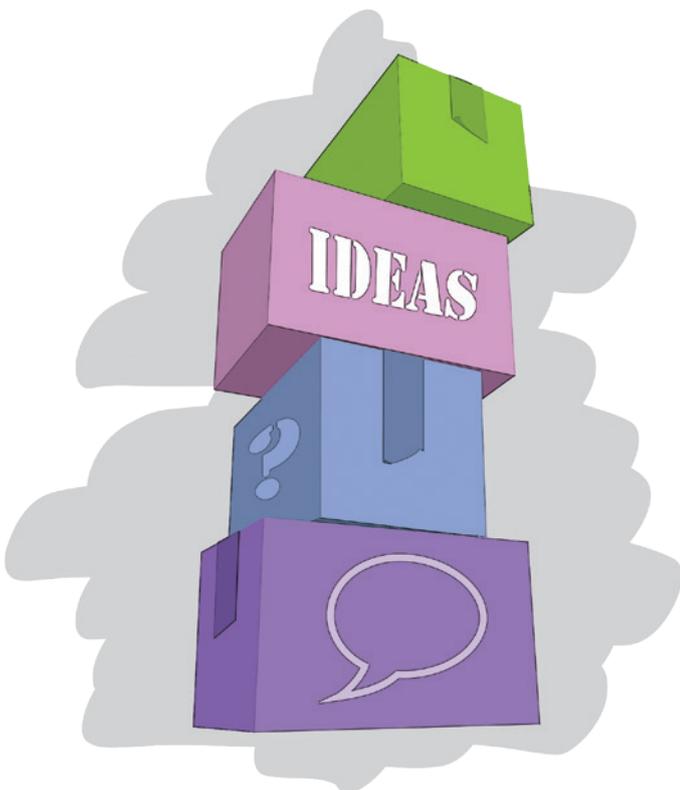
Challenge assumptions

While creative thinking is not so difficult if we put our mind to achieving it, there are still little obstacles that may trip us up along the way, preventing us from achieving our creative goals. Quite often our vulnerability is based on our prior experiences and the fact that in many instances in our lives we are required to conform to laws and follow rules, most often for good reasons.

When we are in the early stages of creative thinking, and particularly when we are generating ideas, it is not always helpful to have rules that restrict our thinking.

The next issue to address with your learners is the problem of making assumptions that are generally based on conventional thinking. In some cases the conventions that are assumed do not exist OR exist in a way that is less than helpful if we want to develop creative ideas.

> The following exercise should be set for your learners as a way of them demonstrating this concept for themselves.
>
> In setting the exercise it is important that you do not offer any explanation prior to completion, as this is likely to influence their responses and lead to non- authentic (or unnatural) responses.
>
> Use and distribute the printable exercise sheet provided. (Resource 1)
>
> *From the starting point of the 9 circles below you are required to create drawings*
>
> The drawings do not need to be technically competent and reassure your learners that this is not a drawing competition. Simple drawings will work perfectly well.
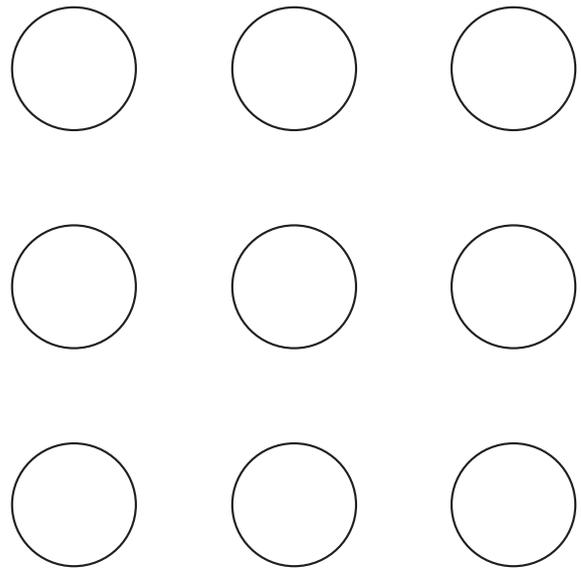
With your learners' drawings completed you should take some time to review what has been produced, and more importantly the 'approaches' that your learners have taken.

Ask your learners to show their drawings to other members of the group, offering a chance for informal comparisons to be made. Ensure that you as a facilitator, are familiar with the different approaches demonstrated, as you may wish to refer to some of them as exemplars of certain approaches.

While there are no formal assessment criteria for this exercise, use the following list as a means of identifying the various approaches that your learners have taken.

It is extremely important that you go through the following stage of identifying each learner's approach, with the group.

Present the following list to your learners in the order that it appears here, ideally via a screen based presentation in which you can reveal the different approaches one by one. As each approach is revealed ask your learners to identify the approach that relates to their own efforts.

9 different drawing within the circles

9 themed or similar drawings within the circles

9 different drawings based on the circles, with some elements extending beyond each circle

9 themed or similar drawings based on the circles, with some elements extending beyond each circle

Drawings that link or join multiple circles together, this may be all of the circles

Drawings that link up or connect behind the circles, as though we are looking through 9 holes

Drawings that link up or connect around the circles without entering them

Drawn on the paper as if it was blank, using the space within the circles and the space around the circles

Drawn somewhere else in the booklet

Torn or cut the paper to support your drawings

Folded or deformed the paper to make 'drawings'

Something else that is more 'creative'

Once each learner has identified their approach from the list ask them to individually think about why they took the approach that you did.

You may suggest to them that generally speaking the further down the list the answer, the more creative the solution is. Of course this idea may be challenged but it should work as a general guide.

What we often realise after this type of exercise is that we have made some kind of assumption about what is expected from us, when in fact the instructions are very open to interpretation. In this case it is common for learners to say that they thought they should draw within the circles, or to follow some other 'rule', even though none were explicitly stated; essentially we make our own assumptions about rules and conventions.

Our assumptions are often based on what we have experienced or been told in a previous situation, something we might refer to as 'received wisdom', which in the vast majority of cases is valid.

However, a failure to challenge assumptions and to just accept things as they are, can seriously restrict our ability to find new ideas, methods, designs etc. Therefore the conscious and deliberate act of challenging assumptions can and should be used in a creative thinking situation.

When faced with a scenario or statement we should attempt to understand if we are making any assumptions about the situation that may ultimately lead you to a predictable solution.

To test this out you are invited to think about the following statement while at the same time trying to identify what assumptions may have been made.

As an exercise introduce the following statement to your learners without informing them of the purpose of the statement as an exercise component.

An experienced teacher is the best person to design the lesson

Based on an initial reading, the statement is fairly innocuous and would be accepted by many educators as a general truth, or a 'truism'. Explain to your learners that this statement is a truism that would generally be agreed with. You will find that in most cases people will accept this statement.

Next ask your learners to write down their own 'truism' based on their own experience and / or belief as an educator. It may be quite closely related to their own practice or subject.

Ask your learners to make a note of their own truism and then to share their own truisms with the group.

Now return to the first truism *'An experienced teacher is the best person to design the lesson'*, projecting it or writing it on a board.

The task for your learners is to deconstruct the phrase to identify where assumptions are being made in this statement. Invite them to undertake this task in small groups.

It may take a little time to get started, as for some people it will remain a truism until the assumptions are pointed out to them; this is not unusual. However, once learners understand the task they can generally identify a number of assumptions themselves.

The following list identifies a number of assumptions that are being made in the statement and you may need to introduce one or even two of these to get things moving, if not that is even better.

As a facilitator talk to the groups and gently lead them to areas of consideration without explicitly telling them the answers. This initial assumption challenging exercise may take longer than some other exercises, but the rewards should make it worthwhile.

Review the following list and see if you can add to it (as a facilitator) before you conduct the learner exercise.

Experience is an indicator of quality

Somebody without teaching experience would not be good at designing the lesson

Lesson design is not a democratic process

A person needs to design the lesson

*A lesson needs to be designed*

A teacher should design the lesson

Once you and your learners have arrived at a number of identified assumptions, you can introduce them to the next stage of the process, which should lead to original thinking and / or original ideas.

To do this you can use a method called 'what iffing', in which a process of creative thinking is initiated by posing questions beginning with the words 'what if'.

If we take one of the assumptions from the list above we can illustrate this subsequent stage of the process:

'What if' we didn't design the lesson? *(Challenging the assumption that a lesson needs to be designed)*
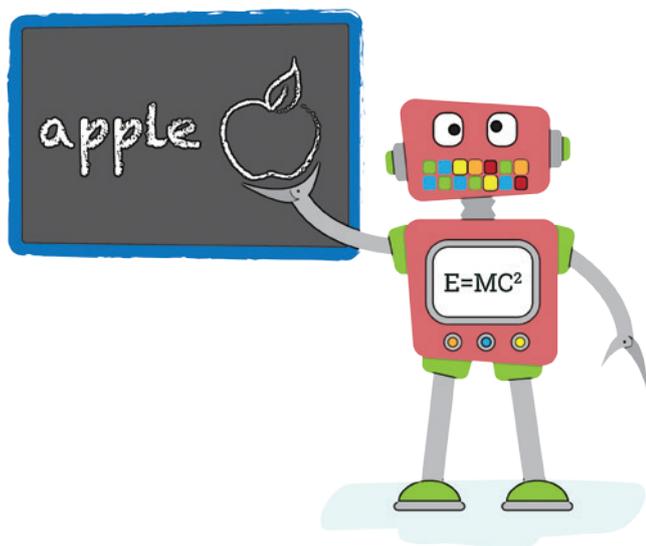
Although it may not be obvious at this stage, but this single step can create a fundamental shift in the way a person approaches the idea of lessons and teaching. The 'what if' question is deliberately provocative; remember that being provocative is a characteristic of lateral thinking (De Bono).

The reason it is such a potent question is that it demands answers that effectively attempt to explain 'how' such a concept could be achieved.

At this stage you can hopefully appreciate how introducing a quota can assist in developing a range of new or alternative ideas. For example suggest at this stage a quota of 5 responses to the question 'what if we didn't design the lesson?'.

The responses from your own learners will vary, though as a guide or introduction, the following are responses generated by other groups:

We could set a topic and invite learners to start discussing it and see where it takes us.

We could ask the learners to design a lesson for themselves.

We could introduce a topic and ask learners what they think they need to know or learn about this topic.

We could inform learners of how they will be tested on the topic and let them manage their own learning as individuals OR in small peer groups.

We could download a lesson plan or use a lesson plan that someone else has already designed.

We could just set a test on the topic and see if the learners need to learn this material (they may already know it).

You may look at this list and immediately identify potential problems in the suggestions, this is natural. However, you should try and identify one or two ideas from this list (or your own list) that you feel have the most potential and / or the least flaws.

The final stage is take these one or two ideas and construct a workable delivery plan that mitigates some or all of the potential problems.

In summary the process you have followed is to:

- Create or identify a truism relating to your practice or situation.
- Identify and note the assumptions being made in the statement.
- Develop these challenged assumptions into 'what if' questions.
- Explore the 'what if' questions by generating alternative responses (assigning a quota) for 'how' such a suggestion might be implemented .
- Evaluate your responses to select a small selection that offer the most potential for development and construct a workable delivery plan for each.

The following truism is offered as a subsequent exercise for your learners to undertake, following the same process. You may want learners to work in small groups or you could conduct the exercise from the front of the class with learners contributing as and when they feel they have something to offer. In this way you can control the timing and pace of the exercise. It may also serve as a useful consolidation exercise.

To learn to read a learner needs access to books

When you have processed the above statement you should invite your learners to return to the truisms that they wrote for themselves (remember the pre-activity). Ask them to follow the same process in challenging assumptions with the objective of arriving at workable delivery plans.

Understanding the potential of challenging assumptions can be a powerful tool in someone's creative thinking toolkit. It can free people from

following self-imposed and arbitrary rules, as well as creating completely new paths to explore in pursuit of creative outputs.

The process of challenging assumptions through initial identification, provoking ideas with 'what if' questions, exploring ways of implementing alternatives and then selecting ideas to develop as workable delivery plans, can very quickly create a wide range of opportunities to enliven and evolve teaching and learning.

The exercises above may take a little more time to facilitate than other creative thinking methods, though you are strongly encouraged to persevere with this method until your learners have grasped the process and can apply it confidently.

The power of 'why?'

Serving a similar purpose to challenging assumptions is the very important act of questioning. The 'Why?' technique is a simple of process of asking 'why?', a number of times in succession, to understand what assumptions are being made and on what grounds they are based, and of course if any of these might be usefully altered.

You may recognise this technique used by young children who seem to have a wonderful curiosity about things that they don't understand. However at this point it is important to note a key difference between a curious child asking 'why?' repeatedly and the way we use it as a creative thinking tool.

For the child the question is a genuine attempt to learn something that they don't already know, whereas for the creative thinker it is about challenging what they already know, with the objective of stimulating some alternative ideas or new questions. The questioning is provocative and designed to make people think again about what they already know (or think they know).

De Bono uses the example of a blackboard in which the creative thinker asks why the blackboard is black. One answer may be that it offers contrast against the white chalk, which could be followed by the question of why the chalk is white? Why do we want to use chalk anyway? Why draw on a blackboard? ... and so on. At each stage an alternative could be offered in the form of a 'what if?' question.

Of course the blackboards in many classrooms have been replaced with white boards, (interactive) smart boards and other display devices, which in some ways demonstrates the validity of this initial exercise and that is was perhaps a good idea to challenge the 'received wisdom' of using blackboards.

Consider a scenario and try to identify the received wisdom or assumptions that are generally made , then instruct your learners to start by asking 'why?' these things are the way they are.

Using the three examples below ask your learners to work in pairs, perhaps taking turns on who asks the questions and who answers the questions (or defends the current position).

Your learners should record any answers that emerge that could potentially lead to alternative approaches, methods or new questions.

1. Why do so many people own cars?

2. Why do people go to school?

3. Why do most shopping malls have the same shops in them?
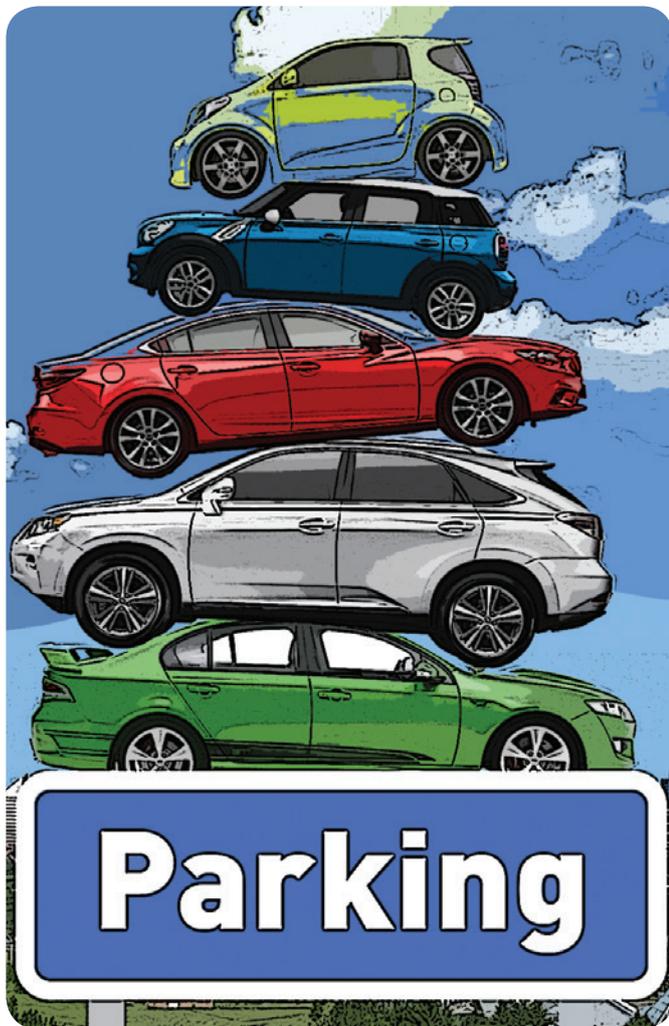
As a facilitator you should carefully manage two aspects of this exercise. The first is to ensure that your learners understand the task and that they are confident and willing to let the exercise flow. This may require you to observe and listen to proceedings, intervening as and when learners could benefit from your encouragement and suggestions, demonstrating if necessary.

The second aspect to be mindful of is the amount of time allocated to the exercise. Too short a time may limit the possibility of 'interesting' and / or relevant questions emerging, too long a time may lead to mental fatigue and your learners losing interest in the session.

As with most exercises, attempt to lead your learners to subjects of relevance.

Once you feel your learners are comfortable with

the method ask them to make a statement about their own practice or subject, as a starting point for development. From this statement repeat the exercise in pairs with the author of the statement defending the position, while their partner constructs a series of 'why' questions.

Further exercises: If you want to try a few more assumption challenging exercises you can search for general truisms on the internet. Below are a few to get you started.

You can approach them by simply listing the things that have been assumed in the making of the statement OR alternatively you might apply the 'Why?' method. Remember, all methods and techniques presented in this guide are designed to be interchangeable and adaptable, combining more than one method to force alternative thinking can be very powerful.

- A person who represents them self in court has a fool for a client
- Live simply so that others may simply live
- A chair has four legs
- A stranger is just a friend you have never met
- You never get a second chance to make a first impression

Brainstorming

Brainstorming is a term that is often used by people engaged in creative thinking, or as some would say, being 'creative'. However it is often practiced without a great deal of consideration of how the brainstorming activity is different from more conventional thinking. When those that brainstorm are asked about the rules or steps of their process, we will often find incomplete or vague answers, suggesting that the thinking is perhaps more vertical or conventional; not always but often.

By bringing together some of the principles covered so far you can (in most cases) improve the efficiency of your brainstorming efforts.

Firstly we will return to the 'Generation of alternatives' method and once again employ the 'Quota model'. In simple terms this means that we will set ourselves a fixed target of ideas that we will aim to meet.

Secondly we will add another condition to our activity, and that is that we will introduce a time limit.

The rationale for introducing fixed time limits is based on two observed phenomena. The time limit will ensure that each session or round of brainstorming does not go on for too long, becoming tedious, boring etc. and it ensures the opposite, that a reasonable amount of thinking effort is applied to avoid stopping too early and with too few suggestions. The second reason for applying a time limit is that it stimulates the mind to try and achieve the task (or goal) and generally more ideas are generated than when no time limit is present. This is related to how our minds function under pressure.
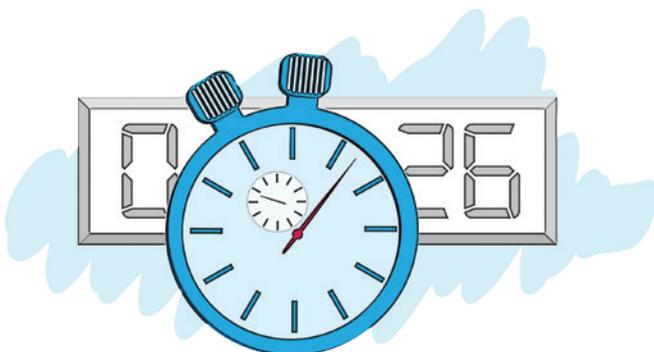
We should also recognise what brainstorming is designed to achieve, being careful not to see it as generating 'fully-formed solutions'. To not recognise this can very quickly lead to dissatisfaction and a lack of confidence in the method. While it is possible to arrive at fully formed and applicable ideas during a round of brainstorming, it is rare. Instead we need to recognise that what we are seeking are 'bridging' ideas.
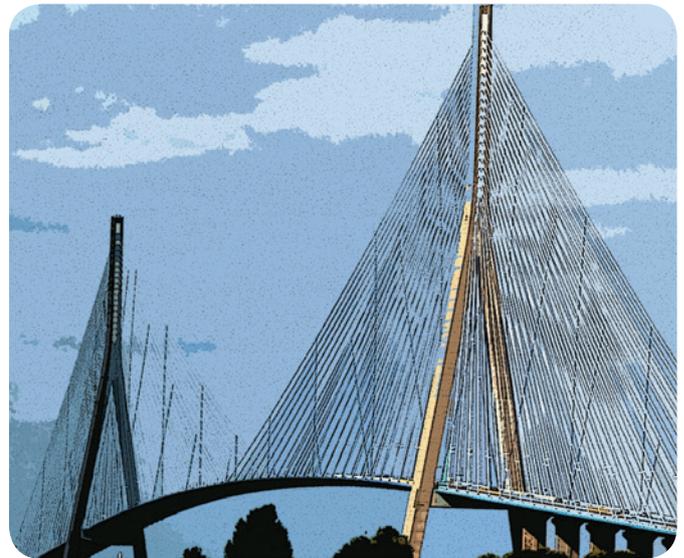
Bridging ideas

A 'bridging' idea is one that offers a different way of thinking about a problem or situation to deliberately take our mind in a different direction from the one we would naturally take. As we move in this new direction we have to combine vertical and lateral thinking (in most cases) to get to a useable solution that is based on our bridging idea. When we have a creative solution to a problem or challenge, it should be possible to recognise the bridging idea as a starting point, but also recognise how it was shaped through vertical (logical) thinking to be useable.

In brainstorming terms this means that we should not dismiss or throw away any ideas during the timed brainstorming session. We reserve judgement until the session has ended and we explore the bridging ideas in a more rational and logical (vertical thinking) manner.

Steps for efficient brainstorming

- Define the problem / question / objective etc.
- Set a time limit for the session (or round)
- Decide on a Quota that you feel you can meet and that will be challenging
- Generate and record ideas until you meet your Quota (or the time runs out) - don't be tempted to judge ideas as they emerge
- Evaluate ideas once the time is up, recognising the value of bridging ideas

Brainstorm alone or in a group?

There is some interesting data around this question, which is worth knowing if you are to reach your creative potential.

According to the data:

A person 'brainstorming' alone, within a comparable time period, will generally produce more ideas (per person) than someone brainstorming as part of a group.

However the 'quality' of ideas produced per person when brainstorming in a group, is generally higher. The group will also invariably produce more ideas in total.

The thinking behind this phenomenon is that when we are interacting with other people, our minds achieve a type of arousal that encourages them to work quicker and more efficiently. This does result in some internal selection happening and this is attributed to the lower number of ideas per person in a group.

Of course in a group activity someone may have already said something that you would have thought of so this alters the figures too.

Finally on this subject, another great power of group brainstorming is that as our brains are very good at responding to new stimuli, when another group member says something unexpected it can suddenly take our minds in a new direction, generating yet another new pathway to explore.

The advice therefore is to brainstorm in a group whenever possible, but if you can only manage to brainstorm alone, ensure you follow the steps listed above.

Why so many 'problems'?

While the term 'problem' has already been used in this training guide, it is perhaps worth offering an explanation of its use and connotations within the field of creative thinking.

Working with 'problems' is a fairly standard approach to learning how to be a more effective creative thinker.

This approach is based on the fact that problems that are set for you (or by you) and have little or no real consequence on your immediate actions or thoughts, will allow you to focus more intently on the method(s) you are trying to develop.

They generally provide enough focus or information for you to readily start processing around a theme, which is an easier task than simply trying to think up 'new ideas', as this is simply too broad or open.

In the context of creative thinking, problems are not seen as negative. In fact a problem in creative

thinking terms really represents an opportunity to do something creative.

It can be useful to collect a range of problems if you intend to develop creative thinking skills with your learners, or you might rely on your learners to come up with some problems themselves.

Below are a range of problem types that you can use for developing creative thinking methods, the list is taken from the book Lateral Thinking (De Bono)[2]:

- 1. **General world problems** such as 'food shortage'. These are obviously open ended problems

- 2. **More immediate problems** such as city traffic control. These are problems which the learners may have come into direct contact with

- 3. **Immediate problem**. Concerning the direct everyday interaction at school (place of learning). If one does deal with real problems it is probably best to deal with them in an abstracted way as if talking about third parties

- 4. **Design and innovation problems**. These are requests to bring about a certain effect. They usually apply to concrete objects but they can also apply to organisation or ideas (e.g. how would you organise a baby sitting service or a 'fast supermarket' (like fast food)?)

- 5. **Closed problems**. These are problems for which there is a definite answer. There is a way of doing something and it is seen to work when it is found. Such problems may be practical ones (for instance how to hang a washing line) or artificial ones (how to make a hole in a postcard big enough to put your head through)

Make a note of these headings and refer to the. When you are in a 'problem' creating mode. You may find it useful to generate a small library of different problems under these headings for use in training workshops. You could reasonably start with a small number, adding to your library over time, perhaps by recording 'problems' that you encounter in daily life, or those that emerge in workshop sessions. If you have colleagues working in the same area you could trade problems to develop your library quicker.

While you may choose to use any type of problem to exercise and develop your creative thinking skills (or the skills of your learners), in terms of what you are trying to achieve during this type of training workshop you may find that problem types 3 and 4 are the most useful, though they do not need to be used exclusively.

Problems to brainstorm

Following the guidance above ask your learners to work in small groups of between 3 and 5 members to optimise their 'quality' of creative thinking.

The first problem for your learners to brainstorm is that of Children getting separated from their parents in large crowds.

Set a time limit of 3 minutes.

Set a Quota of 6 for this exercise.

Ask your learners to generate and record their ideas in full or in note form, remembering not to judge them during the initial stage.

When the time is up (or quota achieved) ask the group to evaluate their ideas as 'bridging ideas' trying to establish if any of them could be developed further with vertical thinking.

Record the responses from the session.

[2] De Bono, Edward. 1990. Lateral Thinking. London: Penguin Books

The second problem for your learners to brainstorm is that of learners completing their coursework at the right time (not leaving it all until the last minute).

Set a time limit of 3 minutes.

Set a Quota of 8 for this exercise (it is closer to the specialism of your learners).

Ask your learners to generate and record their ideas in full or in note form, remembering not to judge them during the initial stage.

When the time is up (or quota achieved) ask the group to evaluate their ideas as 'bridging ideas' trying to establish if any of them could be developed further with vertical thinking.

Record the responses from the session.

The third problem for your learners to brainstorm is that of Creating suitable brainstorming problems to develop ideas for enhancing literacy or language learning and teaching.

Set a time limit of 5 minutes.

Set a Quota of 10 for this exercise (this is more closely related to the practice of your learners).

Ask your learners to generate and record their ideas in full or in note form, remember not to judge them at this stage.

When the time is up (or quota achieved) ask the group to evaluate their ideas as 'bridging ideas' trying to establish if any of them could be developed further with vertical thinking.

Record the responses from the session.

Challenging assumptions: Ask your learners to look back at the first two problems, maybe the third one too, and if they didn't do this initially ask them to try and identify any assumptions that are implied in the problem definition. Can any of these be challenged to give you a different starting point?

Further exercises: Although you are more than capable of generating your own problems, here are a few for you to work with. Think about the brainstorming guidelines AND the challenging of assumptions:

- Encouraging people to attend art galleries
- Overcrowding in cities
- Continuing education outside of the classroom

Methods for developing creative thinking: External influences

So far we have looked at a range of methods that can be used in isolation or combined together to create thinking routines that will invariably result in an increased number of ideas in response to a problem or opportunity, and quite often these will result in a more creative or original solution.

The one thing that these methods have in common is that they all rely on the stimulus for new thinking to come from within you, based on things you already know and that you would logically associate with the given problem. This is completely normal, as in our lives we mostly need to apply vertical thinking that is based on prior experience and knowledge.

However, for truly original solutions we may need a very different type of stimulus, one that affects the problem from an external and unrelated starting point. Perhaps this is the type of 'wrong' step we need to take as mentioned in the lateral thinking characteristics (see comparison table above).

Generating and responding to these external and unrelated stimuli is a very powerful part of creative thinking practice, despite it being the approach that most people doubt when they first encounter it.

I would suggest that the fact that it can be a little uncomfortable or unfamiliar as a way to approach a problem is actually a positive thing, particularly if we want unfamiliar and truly original outcomes.

Random input

The most widely used version of this external stimulus approach is generally referred to as 'random input', although other terms such as P.S.I (problem + stimulus + idea) exist to describe the same principles. One of the reasons that it is so widely used is that it is such a versatile method of re-directing our thinking within a wide range of contexts.

Again it is a fairly simple concept to grasp in terms of its application, though with a few principles in mind it can be all the more effective.

Fundamentally a problem (or opportunity) is defined, in the same way that brainstorming often starts. However, in this method a totally unrelated stimulus is introduced to influence the thinking.

The stimulus could be a word (most common), a colour, an object, a film genre, a game, a number, a name, a season ... pretty much anything you can think of.

Why it works: Returning to De Bono[3] we are provided with an explanation for why the random input and similar methods work, as on the surface they can seem a little odd or even desperate.

De Bono's explanation offers us the idea that the human mind is a 'self-maximising' system. In this he suggests that the human mind has an exceptional capacity to make connections between many disparate (different) pieces of information, even when the connections did not necessarily exist beforehand. The mind also works in an involuntary way in seeking connections, so effectively it just happens.

3 De Bono, Edward. 1990. Lateral Thinking. London: Penguin Books
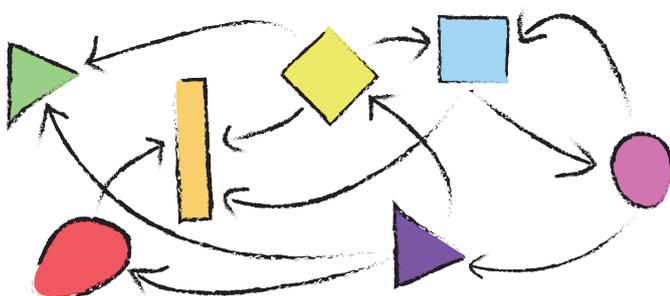
Random input: simple form

Even in its simplest form the random input technique can be effective in stimulating new and unexpected ideas.

For example if we are thinking about writing a story we may use a random word generator to determine the setting of our story (Jungle, farm, city etc), the protagonist in our story (a young boy, a beauty queen, a dog etc), the theme of our story (hope, love, friendship etc). We could extend this to determine the characteristics of our protagonist in the same way. Lets assume we were assigned the dog, our random word generator may determine that our dog is (intelligent, or gullible, or cynical etc), our city may be hostile, or overcrowded, or futuristic etc.

Random input: as a brainstorming tool

Applying random input within a brainstorming session is perhaps where you will achieve the most creative outcomes, though it does require a slightly more involved process. The good news is that this process is similar in many ways to the original brainstorming techniques already covered.

The steps to using random input within a brainstorming (problem solving) context are as follows:

- Define the problem / question / objective etc.
- (2) Introduce a random input stimulus (word, concept, colour, object etc.)
- (3) List the characteristics that you associate with the random input
- Set a time limit for the session (or round)
- Decide on a quota that you can meet and that will be challenging
- Generate and record ideas until you meet your Quota (or the time runs out) don't be tempted to judge ideas as they emerge
- Evaluate ideas once the time is up, recognising the value of bridging ideas

I am sure you have noticed that most of the stages are exactly the same as those used for general brainstorming, with the new introduction of stages 2 and 3.

Stage 2 is relatively simple to understand immediately, as long as you have some way of generating a random stimulus. At this stage you could use an online random word generator (www.watchout4snakes.com is a particularly good one), a dictionary, newspaper, random image/photo generator (www.photo.net has a good example), object, colour, character etc.

Associative Thinking: Stage 3 is a little more complex but after you have executed it once it will be very clear and simple. This stage requires a slightly different type of thinking that we refer to as 'associative thinking', making associations or observations about something.

Word Association: You may have played the game 'word association' either with friends, family or even with your learners. In the game a word is chosen as a starting point and in turn each player must make an association to the previous word within a given time (say 5 seconds) to stay in the game. Normally it is 'illegal' to repeat a word and a player doing so would be 'out' for the remainder of that round, as they would if they could not respond in the given time.

For example we may start with the word 'tea', which could be followed by the word 'drink' > 'water' > 'bathe' > 'soap' > 'clean' > 'Singapore'...and so on.

While this kind of game is fun, and a good way for people to learn vocabulary, you can see that very quickly we moved from the hot beverage tea (common in England) to a country in Asia.

As a warm-up exercise play the game with your learners for 1 or 2 rounds. This will serve the purpose of demonstrating how easily it is to list associations relating to a thing or concept, but it will also demonstrate how such an unregulated process will take you far away from your starting point, which typically will be our 'problem'.

In order to apply this type of word association process to our brainstorming, we simply need to either respond to the original word or concept for each player's turn OR at least respond to new words or concepts that are still closely related to the starting point. This imposes a form of regulation.

For example if your random stimulus is a common object that is within the current room, lets say a 'bottle', this becomes the starting point and you should try and list its characteristics, or any other association that you may observe; things relating to the concept of a bottle.

This may lead to a set of ideas such as:

Bottle > *Glass* > *fragile* > *sharp* > *recyclable*

Bottle > *Container* > *storage* > *hollow*

Bottle > *Shape* > *tapered* > *round* > *cylinder*

Bottle > *Neck* > *bottle top* > *label*

From these new words and their associated ideas, we then re-consider our initial problem and make connections between the two.

Random input: brainstorming example

The following random input processing is taken from Edward De Bono's book 'Lateral Thinking'[4], and it serves as a good example of random input processing. It can be shared with your learners in order for them to appreciate the process and to see the relationship between the starting point and the possible 'solutions'.

The problem being worked on in this case was a general world problem of people smoking or not being able to give up the habit of smoking. The random stimulation generated was 'traffic light'. As you can see the concept of 'traffic light' is far removed from smoking at this stage.

While a number of characteristics were noted, those that seemed promising were the idea of a signal, a warning. Closely related to this was the colour red, symbolising 'stop' or 'danger' in many cultures.

One promising idea that came from the session was to incorporate a red signal along the shaft of a cigarette, perhaps as a red ring. It could appear just before the filter where there is more tar concentrated, to signal to smokers to stop at that point and avoid the more harmful part of the cigarette. The idea was then extended to offer cigarettes for sale with red indicators that started near the filter when the smoker first decided they wanted to give up smoking, and as they progressed the red indicators would be

located progressively further away from the filter, so that less of the cigarette would be smoked each time, without the need to stop abruptly.

While there may be questions about the psychology of this idea (would it actually work in stopping smoking?), it does illustrate how the random input stimulus, when processed effectively, can influence thinking significantly.
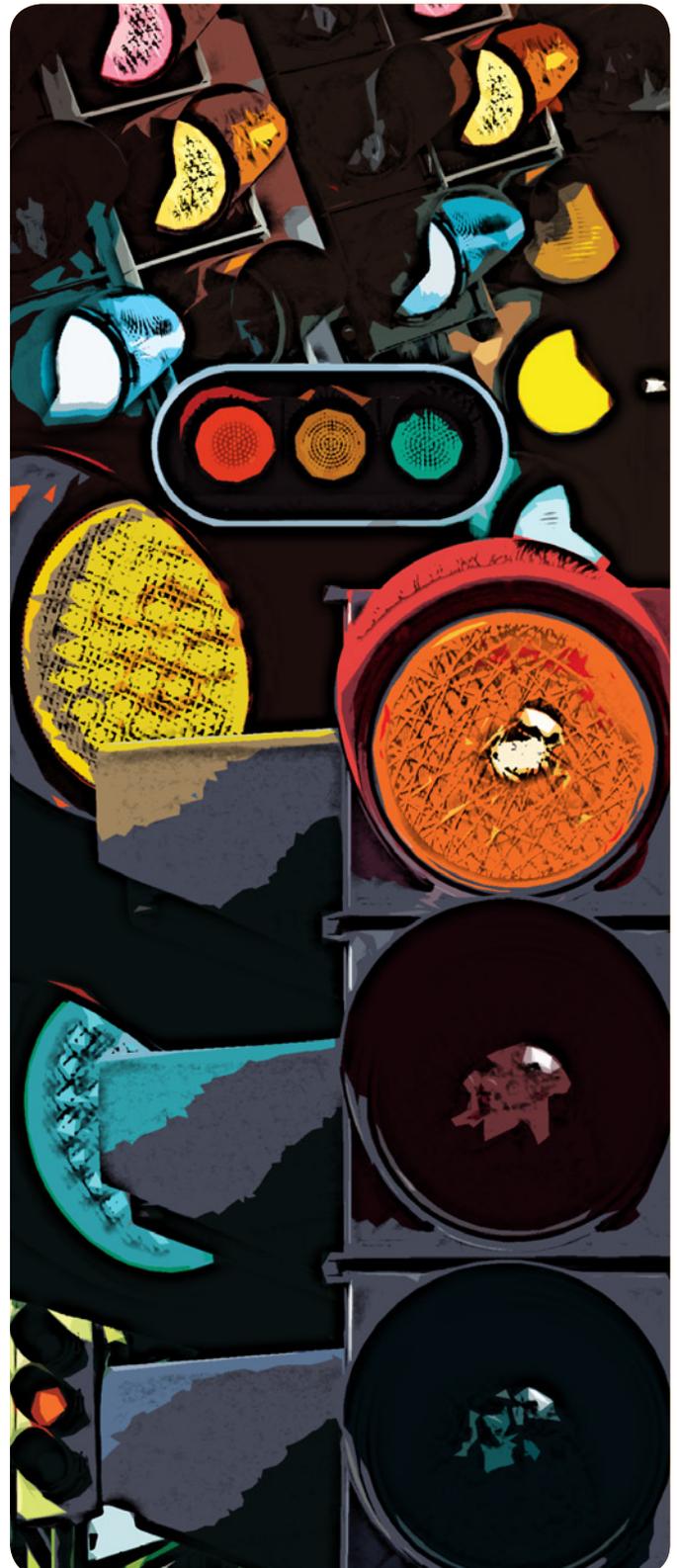
[4] De Bono, Edward. 1990. Lateral Thinking. London: Penguin Books

Random input: problems to brainstorm

Following the advice above you should ask your learners to work in small groups of between 3 and 5 members to optimise the 'quality' of their creative thinking.

The first problem is more of a design challenge in which the objective is to generate new ideas for kitchen design.

You can introduce this exercise by announcing to your learners that for the purpose of the exercise they should see themselves as kitchen designers or innovators; incorporating some role play can be effective. The brief is fairly open. Your learners should consider designing or innovating any ideas that would be useful in creative kitchen design. This could relate to storage, cooking processes, cleaning, space usage etc. anything that we would associate with kitchens and their functions. It is important that while objectives are set, learners are given enough latitude to be flexible with their ideas.

1. For this exercise the random input word is **Spaceship**

- Start by applying some associative thinking to identify characteristics associated with the random input stimulus, keep a note of them. This should take around 1 - 2 minutes

- Set a brainstorming time limit of 5 minutes

- Set a Quota of 6 for this exercise (feel free to increase the quota if you think your learners could achieve more)

- Generate and record your ideas in full or in note form, remember not to judge them at this stage. Ideas should stem from the random input stimulus 'spaceship' or any of the associations that your learners made with this object.

- When the time is up (or quota achieved) evaluate your ideas as 'bridging ideas' trying to establish if any of them could be developed further with vertical thinking.

Record the responses from the session.
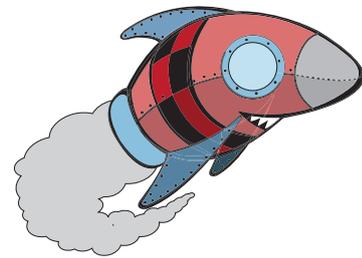
2. For the second exercise and as a problem more related to the learning and teaching of literacy and languages, consider innovative ways to support the improvement (learning) of spelling.

The random input word is **Bank**

Follow the same guidelines as the previous example (replacing 'spaceship' with 'bank')

Record the responses from the session.

3. For the third exercise and rather than setting a new problem, in this case continue with the same problem listed above, innovative ways to support the improvement (learning) of spelling.

However the random input word is now **Transmitting**

Record your responses from the session:

4. Ask your learners to work in a small group and to identify an aspect of literacy or language learning and teaching that they think might benefit from some random input based brainstorming. Assuming a positive change or development as the objective.

Make a note of this problem or 'probortunity'.

The random input word is **Machine**

Record your responses from the session.

In the previous examples the random words were generated from the web site:

www.watchout4snakes.com

This site offers a lot of control over the types of words that are generated and it even allows you to generate phrases and sentences.

Random word activities

Following is a small selection of word activities that you can use with your learners or to develop some ideas yourself. All of them can be adapted for use in literacy and language learning and teaching.

Random words object: Taking 2 random words and blending them together in some way to find a new word that becomes the name of a fictional object. Write a description of your object and explain what it is used for, encouraging very unusual responses.

Bookend sentence: Generate 3 random words and make a sentence that uses one of your words as the first word of the sentence and one of your words as the last word of the sentence. If you can also use your third word somewhere in the sentence then that is even better. How many sentences can you think of?

Fun with acronyms: Take a short random word (between 3 and 6 letters) and using the word as an acronym, try to create a meaningful statement. Maybe you set yourself a quota to stretch your creative thinking.

Reverse crossword: Generate 10 random words and put them in a list. Create a simple crossword puzzle layout (using gridded paper) that will accommodate your 10 words. Your challenge is to write the clues to your 10 words so that someone could potentially solve your crossword.

Future thinking: Generate 3 random words and from each word make a prediction about how it will impact in some way on future technology or inventions.

Factoid: A factoid is a piece of unreliable information that sounds plausible (believable) and may be believed as the truth, if repeated often enough. Generate a random word and write a factoid related to that word, it can be completely untrue but should be believable.

Anagram game: Generate 4 random words selecting the final word as your 'target' word. Using the letters from the other 3 words, they do not have to be in order nor do you need to use them all, think of as many anagram words as possible that relate to the target word.

Missing words: Generate a single random word (a noun) and imagine it has been deleted from history. What imaginative words can you think of that would fill the gap left by your missing word?

Wise words: Generate 5 random words and for each word try to create a wise saying (along the lines of the Chinese teacher and philosopher Confucius).

'Before you embark on a journey of revenge, dig two graves.' Confucius (as an example)

Create a logo: Taking 2 random words as your starting point decide on a company name. Write a short description of what the company does then design a simple logo in which the visual elements relate to the company.

Descriptive dilemma: Generate 3 random words and create a description that could be applied to 2 of the words, but definitely not to all 3.

Oblique thinking strategies

Brian Eno, the eminent music producer (working with the likes of U2, David Bowie, Coldplay, Paul Simon, Grace Jones) and former keyboard player with the band Roxy Music, is often credited with 'inventing' oblique thinking strategies. In reality his contribution was probably more to do with popularising the method through the publication of his 'oblique thinking cards'.

Eno claimed that bands and artists came to him for 'creative input' into their work and this in itself created certain pressures when working in a professional studio. As studio was time expensive and the bands / artists often wanted immediate results, Eno said that his creativity was often suppressed by the added pressure and he found himself doing things that he had done before or that he knew would work, a type of vertical thinking.

He had noticed though that when he was out walking or relaxing, creative ideas came to him more readily. He decided to start making notes of the ideas that emerged during relaxation and he recorded these notes on small cards.

When he was in the studio in a work situation he would take out his cards and choose one at random (random input) with a commitment to respond to what was written on the card (not being tempted to choose another), which was normally a cryptic instruction or suggestion that could be interpreted quite broadly.

Here are some examples of Eno's oblique thinking cards[5]. Even though they were conceived in relation to music production and composition, try to imagine how they might support your creativity within your own field:

> *'Emphasise repetition'*
>
> *'Work at a different speed'*
>
> *'Not building a wall but making a brick'*

These type of oblique thinking strategies are really another random input method, however as Eno attempted to do (this may not always be obvious) you can relate them a little more specifically to the area that you are working in; taking care not to be prescriptive

A subject-specific set of oblique thinking starting points was created some years ago by a lecturer in visual design, working with students in areas such as illustration, photography, graphic design, animation / film etc. By observing existing examples of 'creative' visual communication to try and identify a dominant approach or idea in each example, a list of oblique strategies was created (Resource 2)[6]. The approach was less cryptic than the original Eno cards and in many cases a single word was meaningful enough for a visual designer to respond to effectively.
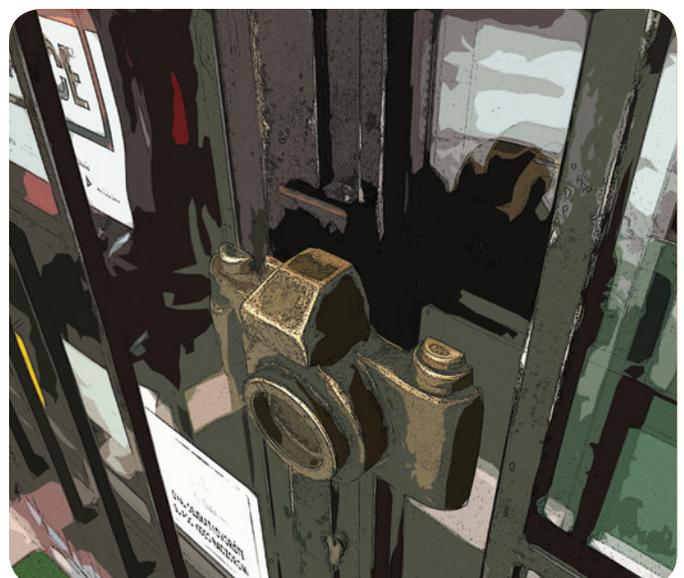
[5] "Oblique Strategies," Welcome to the Official Brian Eno Web Store, http://www.enoshop.co.uk/product/oblique-strategies.html, accessed October 6, 2015.
[6] Hunt, Steven "MA Visual Communication, Birmingham City University, MA Studio, October 2009, Analytical Practice lecture.

As a conceptual exercise (your learners are not expected to produce the visual work), ask your learners to consider the following 'visual design briefs'. Approach each brief from the starting point of some examples from this second set of 'associative' oblique strategies. In each case the word or phrase elected will become the external stimuli, much like a random input element. The exercises are designed to give you an idea of how these more related stimuli work in practice.

Assume that you are tasked with the following assignments to execute in a 'creative way'. In these cases an oblique thinking selection has been made for you, though you could choose them at random from the list (Appendix 2). Ask your learners to simply describe some of their ideas beneath each assignment, following a systematic processing of the problem in relation to the random (oblique) input.

If you wish to introduce role play with your learners you can do this by asking them to imagine themselves as creative photographers, creative advertisers, creative packaging or graphic designers.

1. Create a photographic portrait of a celebrity (you choose who) responding to the oblique strategy:

'It's all about the lines'

2. Design an advert for a fruity drink responding to the oblique strategy:

'it is connected to head wear'

3. Design packaging for a new female fragrance (you can name it too) responding to the oblique strategy:

'the history of art'

Here are a few more examples of oblique strategies if you want to try any of the 3 challenges above from a different starting point:

'Make the symmetrical asymmetrical'

'What can nature bring to your process?'

'Combine two things into one'

Summary & resources

By completing the activities in this training guide with your learners / trainees, you may have created challenges to thinking processes that some people will find difficult, despite the various methods being relatively easy to understand.

Far form this discomfort being a negative, it should be celebrated for forcing your audience to really question and even wrestle with conventional (vertical) thinking. Remember that truly original and creative thinking can only be achieved by doing things differently.

Hopefully your learners / trainees will feel more confident in applying the various methods in generating subsequent learning and teaching resources, or by introducing creative thinking methods into lessons.

While this set of activities can be (and indeed has been) used as the basis for a creative thinking course, feel free to adapt, improve and re-contextualise any or all of the methods; take ownership for yourself.

Finally as a trainer or trainee, keep in mind that learning a new skill requires practise and a degree of patience, so do not be deterred if progress is initially slow, it will happen with the right attitude.

Resources

Resource 1: Printable template for use with the drawing exercise on page 15.

Resource 2: List of oblique thinking style prompts generated (initially) for visual designers, though generally flexible enough to use in a range of subjects.

Resource 3: The 'Creative thinking emergency toolkit' is a l1st containing all of the creative thinking methods covered in the training guidelines, along with two additional methods for your consideration.

The 'Creative thinking emergency toolkit' is offered in part as an aide-memoire to remind users of the methods previously practiced, and as a ready reference for anyone to obtain a concise overview of any of the principal methods of creative thinking.
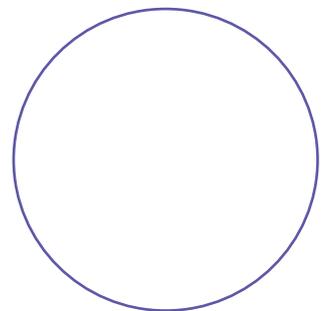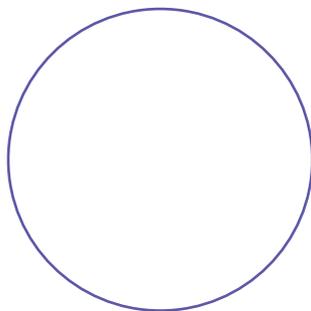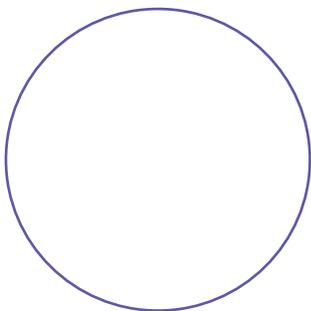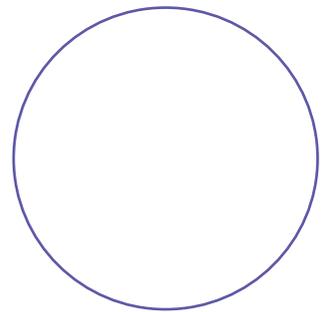
Resource 1

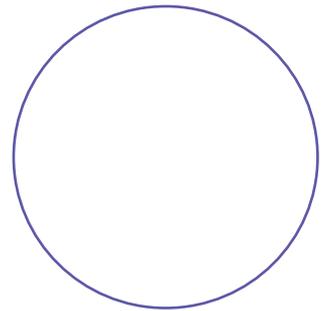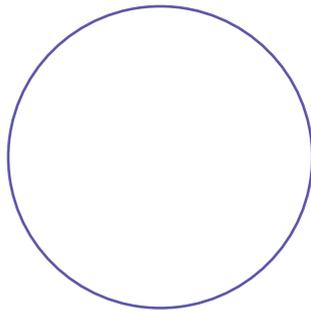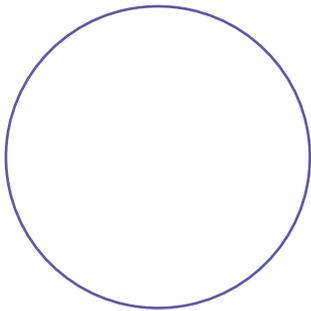This is a silent exercise, please follow the instructions: **From the starting point of the 9 circles below you are required to create drawings.**
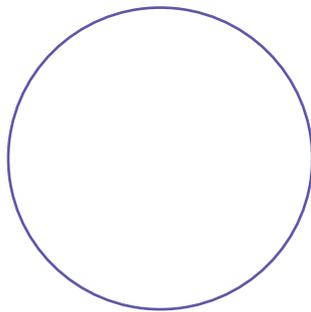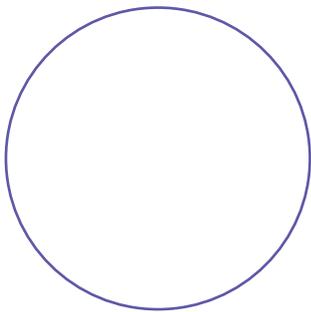
Oblique thinking strategies for visual designers		36	Cinematic styles	
1	Favour abstraction	37	Blend the elements	
2	Create a sequence	38	Create rhythm	
3	How would it be approached by a fashion designer?	39	Balance without symmetry	
4	View the projection	40	Collage of elements	
5	Make the real surreal	41	Sequential narrative	
6	The range of jewellery design	42	Colour is king	
7	The focus should be patterning	43	Explore the fantasy	
8	Collage of styles	44	Combine two things into one	
9	The history of art	45	Natural materials only	
10	Influenced by music	46	Any colour you like as long as it is black	
11	What can nature offer to your process?	47	Look back in time	
12	Urban graffiti	48	Simplify the main elements	
13	It is connected to head wear	49	Deep perspective	
14	Think of it as a dance	50	Silhouettes are more immediate	
15	Origami has the answer	51	Scale to create impact or insignificance	
16	Express the narrative	52	Hand made elements only	
17	Hiding in the shadows	53	Expose the process	
18	Make it poetic			
19	The answer could be a model			
20	Create a mask			
21	Is it real or just an illusion?			
22	Emphasise the lettering			
23	Echoes of architecture			
24	Cinematic principles			
25	Sculpt it			
26	Focus on character			
27	How would an artist approach it?			
28	Think in three dimensions			
29	Negative space is positive			
30	Make the symmetrical asymmetrical			
31	An Animatic is a proof of concept			
32	Avoid details			
33	It's all about the lines			
34	Repetition is always an option			
35	Smooth contours			

Creative thinking emergency toolkit

Lateral (or creative) thinking	Is as much an attitude as anything else. Deciding that you WILL be creative within a given context has already increased your chances of arriving at a creative solution, deciding not to be creative is equally as powerful! Non-sequential • Provocative • Probability • Generative • Rich
Generation of alternatives	Committing to more than one idea in any context will again radically increase your chances of a more creative solution. Never settle for the idea that everybody else would have thought of – not if you wish to be the creative one.
Quotas	Generating Alternatives needs to be managed and to do this we set targets in terms of the number of ideas – these are called Quotas. Aim for a Quota that is challenging and moves through obvious > unexpected > potentially crazy
Time limits	In the same way that quotas help you to manage your time and resources, so will a set time limit. This method generally increases the work rate of participants and really gets the mind working, unless the time limit is 'over-generous'.
Challenge assumptions	It is easy to assume that because something was a certain way before then it always will be. You MUST learn to question such assumptions and look for alternative ways of approaching the situation, even if it generates more questions.
The power of 'why?'	As part of challenging assumptions get into the habit of asking questions, even if they are provocative and are asked of things that perhaps you already know, push for new answers, ask why?
Brainstorming (guidelines)	Brainstorming is a way of generating lots of ideas around any given topic or problem, though there are some guidelines: Define problem > Set a time limit > Defer judgment (record ALL ideas) > Evaluate after session > Recognise Bridging Ideas
Problem setting / solving	Problems are a good way to introduce people to creative thinking methods, though do not underestimate the potential in asking others to set problems for exercises, this becomes a creative thinking task in its own right.
What-iffing	Asking the question 'What if?' about any given problem or situation can help you to see things differently. It is a simple technique though powerful if applied with a quota – how many times will you ask 'What if' differently?
Random input	Introducing a random stimulus to provoke associative thinking within the context of the problem. Stimuli can be colours, words, images, objects, pretty much anything that has definable characteristics.
Associative thinking	Particularly when you are using a form of random input the most important stage is often the associative thinking that allows you to determine the characteristics of your random input stimulus - this is the critical stage of random input methods.
Oblique thinking strategies	Similar in many ways to random input, this technique relies on ambiguous instructions that offer some form of instructional guidance to solving a problem. Its strength is that the interpretation will be influenced by your current context
Subject-specific oblique thinking strategies	The same type of ambiguous instructions can be created with a closer relationship to the topic or subject area being worked in, the key is to offer usable suggestions without being over prescriptive.

Two more methods that were not covered within the guideline activities

Inversion	Inversion is a method that deliberately seeks to turn the problem on its head. If the problem is 'how de we get the workers to the cars at the right time?' the inversion may be 'how do we get the cars to the workers?' (Henry Ford)
Re-state the problem	Re-stating a problem is about shifting the emphasis before any ideas have been generated. For example the problem of overcrowded cities may be re-stated as 'why don't people want to live in the country (or smaller towns)?'