

Creative Thinking



WORKBOOK



Supreme ICT Academy
Efficiency and Effectiveness

Learning Log

Section of session	Key learning point



Supreme ICT Academy
Efficiency and Effectiveness

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Introduction

The traditional office life doesn't always leave a lot of space for creativity – we have deadlines, projects and meetings all vying for our attention. It sometimes feels easier to do what we've always done to ensure we are hitting those KPIs or targets. However, if we can apply creative thinking to our work, we can unlock more meaningful, efficient and exciting results which can alleviate stress personally, whilst positively impacting the bottom line for the company.

With this in mind this course has been designed to equip you with the techniques to solve problems creatively in the complex, hectic reality of everyday life.

Objectives

- Identify what being creative means, and explore the differences between divergent and convergent thinking
- Understand how our brain works, and explore the best "brain state" for creativity
- Explore the concept of "rivers of thinking" and how small changes can aid the unblocking of creative barriers
- Discover how playing different roles can improve our divergent thinking and creativity
- Look at ways we can ensure a growth mindset whilst we tackle creative problems



What is creativity?

Creativity means using your imagination or original ideas to create something new (or even reinvent something existing). The key word here is imagination. Einstein states that “Imagination is more important than knowledge” and each and every one of us is born with this gift. Think about when you were children (or if you have children yourself), how often will you see children play with boxes instead of the expensive plastic toy? Children do this naturally and without any worry of judgement or prejudice, but unfortunately, we lose this skill as we grow up.

It is really important that we foster imagination in the workplace. If we utilise our imagination, it means we are fostering our critical thinking skills and creative problem-solving abilities. It also builds social and emotional development as it allows us to contemplate different resolutions to challenges, which helps build empathy for others.

If we use our imagination to tap into our creativity, we are opening a door of possibilities.

A way we can tap into this is through something called divergent thinking. Divergent thinking is when a number of different thoughts and ideas are options for a challenge, as opposed to convergent thinking, where only one stream of thought is put forward.

Notes:

When are you at your most creative?

So, we know that we are all born with the ability to be imaginative, and in turn creative. However, asking someone to be creative in the here and now is like trying to nail jelly on a wall! If we can't switch creativity on like a tap, when does it come to us?

It comes when we are in a relaxed state, not when our boss demands that we come up with a creative idea on the spot. It can be different for everyone; some examples of where people find they are at their most creative include:

- Being in the shower
- Walking the dog
- Chatting to friends
- Sitting in the car
- First waking up
- Cooking dinner

It is the same for everybody – Neil Gaiman (best-selling author of Stardust, Coraline and American Gods amongst many others) begins his writing process by setting aside all distractions and deliberately making himself bored. He describes the process in the following way:

I think it's about where ideas come from, they come from daydreaming, from drifting, that moment when you're just sitting there...

The trouble with these days is that it's really hard to get bored. I have 2.4 million people on Twitter who will entertain me at any moment...

it's really hard to get bored. I'm much better at putting my phone away, going for boring walks, actually trying to find the space to get bored in. That's what I've started saying to people who say 'I want to be a writer', I say 'great, get bored'

How our brain works

We explored where you find yourself at your most creative, and it is interesting to note that none of you said, “when my boss asks me to come up with a really good idea on the spot”. There is a reason for this. It is all about our subconscious and our brain states.

Think of our subconscious as a store cupboard. Everything that happens to us, everything we learn and experience is stored away there. We can then use the data from here to help us make decisions, behave in certain ways and ultimately survive.

We need to store information in our subconscious as we take in a lot of information and stimulus each day. A study by Roger Bon of the University of California-San Diego suggests that every day, we are inundated with 34Gb worth of information. To put it into context, 34Gb is over 7000 songs or over 40 hours of video. If this was uploaded to your laptop each day, it would overload it in a week!

Another study by Dr. Joseph Dispenza also suggests that the brain processes 400 Billion pieces of information a second. He further adds that each of the senses processes the following amounts of information PER SECOND.

- Eyes – ten million
- Skin – one million
- Ears – one hundred thousand
- Smell – one hundred thousand
- Taste – one thousand

If this was in our conscious mind, we would likely go mad (or at the very least overload like that laptop)!

Because our subconscious is collecting all of this data all day whilst we are awake, it means it can be difficult to access all of the time. There is a doorway between the conscious and the subconscious and the brain very cleverly opens and shuts the door depending on how much it wants us to access our subconscious as it protects us from being over stimulated.

The doorway is opened or closed by our brain waves, otherwise known as brain states.

There are four key brain states and you’re in one of them at any given time.

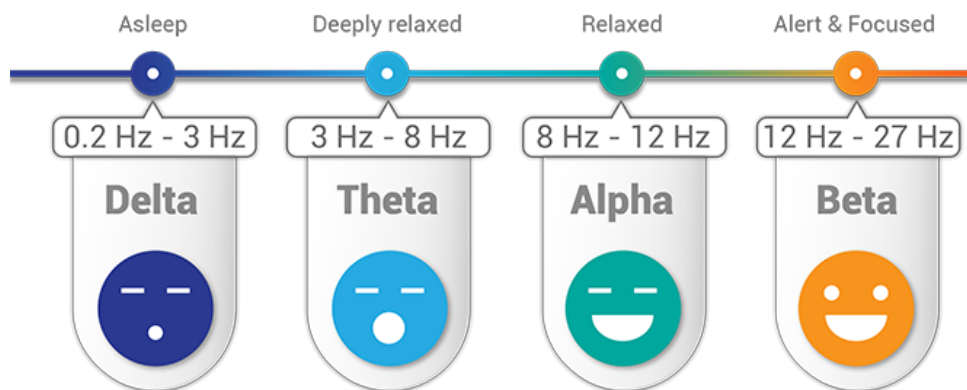
Brain States

Beta State: is the state you are in when you are fully conscious and concentrating on lots of different things. It is a good state to be in to get your to-do list done. When we are in this state, we are operating solely with the conscious brain and the little door is shut to the subconscious.

Alpha State: is the next state and the doorway is ajar allowing a manageable amount of information to flow between the conscious and subconscious. It's allowing you access to the store cupboard but not bombarding you. In Alpha State your brain and body are more relaxed and you're probably focusing on one thing rather than lots of things as you were in beta. You might be driving along a motorway listening to music, doing the washing up or daydreaming in the shower. Alpha waves are the 'bridge' between our conscious thinking (Beta) and subconscious (Theta) mind

Theta State: Theta waves are known as the 'suggestible waves', because of their prevalence when one is in a trance or hypnotic state. The doorway is quite far open and the access to the subconscious is great – there's lots of information passing through, in fact so much that your brain is starting to shut down your conscious so that it can cope. You are either falling asleep or waking up from a deep sleep. It's where you go when you press 'snooze'.

Delta State: Delta is associated with deep levels of relaxation and restorative sleep – you are not conscious. You're in a deep sleep and your body is regenerating. You will do a dance between Theta and Delta while asleep but to feel really rested you need at least 4 hours in Delta. The doorway at this point is completely open and there's so much information flowing between your conscious and subconscious that your body shuts down. This is where people stay when they are in a coma.



The Paperclip Test

We have talked about where we get our creativity, and the brain state we need to be in for us to allow creative thoughts to happen. However, the older we get, the more difficult it becomes to harness if we don't work out our "creative muscle" as we would any other muscle in our body. Sir Ken Robinson lead a study in 2011 which tests just this. He asked participants to come up with as many uses as they could for a paperclip, except the participants originally were children at a playschool. He measured that if they could come up with over 100 uses for a paperclip, they would be considered geniuses in divergent thinking.

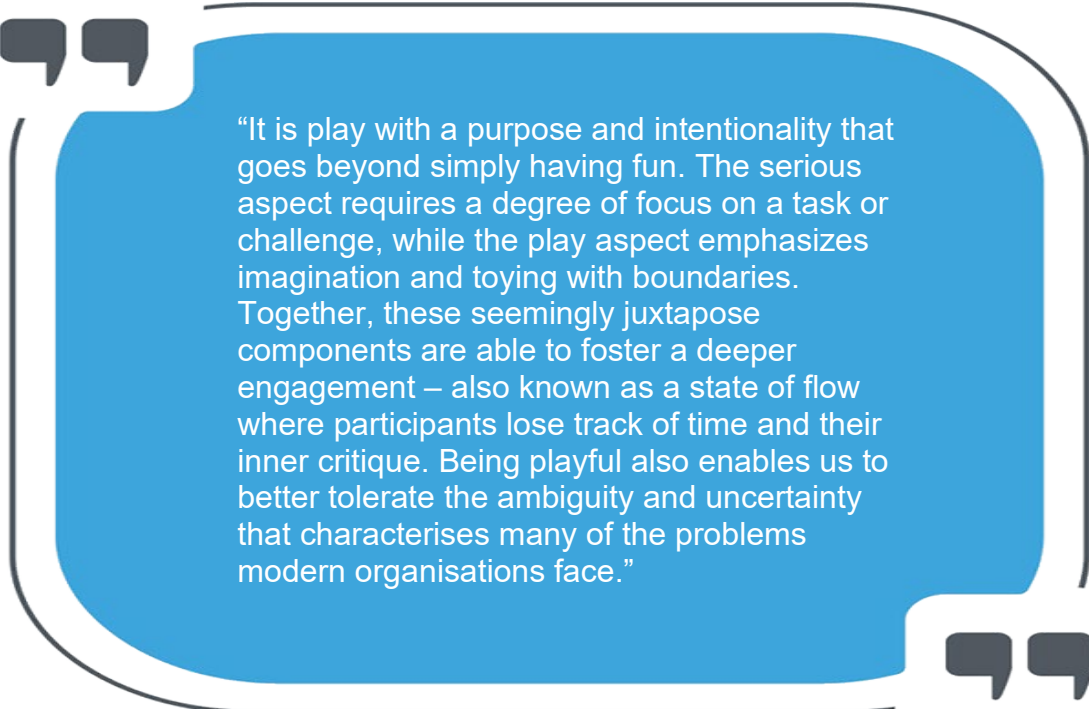
The children measured at a 98% genius level in the first study (many of them exceeding the 100 and hitting 200 uses for a paperclip). Five years later, he tested the same children – and the genius level had dropped to 50%. After another five years, the genius level dropped even further still.

Adults who took the test generally can only think of about 10-15 ideas. The reason for this is that over time the education system can limit creative thinking as we are taught there is only one solution to problems, and as such that convergent thinking is the only way for us to solve problems. We also use the creative muscle less and less.

Notes:

Serious Play

Another tactic we can learn to help with our creativity is something called serious play; many experts in the world of creativity and problem solving highlight that serious play can serve as a vehicle for complex problem-solving, using an array of activities such as role-play, theatre improvisation, gamification and other simulations. It has been defined in the following way:



“It is play with a purpose and intentionality that goes beyond simply having fun. The serious aspect requires a degree of focus on a task or challenge, while the play aspect emphasizes imagination and toying with boundaries. Together, these seemingly juxtapose components are able to foster a deeper engagement – also known as a state of flow where participants lose track of time and their inner critique. Being playful also enables us to better tolerate the ambiguity and uncertainty that characterises many of the problems modern organisations face.”

We will be using this method throughout the whole workshop, and we challenge you to use this going forward in work meetings!

Convergent Thinking – What river am I in?

Very often when we are trying to solve a problem, especially a problem we identify or specialise in, we end up getting stuck in convergent thinking patterns.

Edward de Bono (often called the Godfather of Creative Thinking) likens this convergent thinking with the following analogy.

“The mind is like a mountain and anything that goes into your mind (experiences, information, absolutely any stimulus at all) is like a drop of rain water. Your brain then decides where to channel the droplets by looking for similarities/past experiences and creates streams of recognition.

The more experience/information you have on a particular subject area, the more those raindrops will fall in the same place, causing those streams of recognition to become deeper, faster and wider.”

If we think about how this theory applies to us; our experiences and knowledge around work, it isn't a stream - it's a surging river. The more specialised we are the bigger and faster the river is.

Although having a base of knowledge is always useful to start with when unleashing our creativity, our brains are also hard wired to go straight to the most efficient place for an easy to find, and predictable answer, which of course stifles creativity. We obviously need the brain to operate in this way to a degree just to be able to process the barrage of information we are subjected to everyday, but we also need to train it to bypass this at times too.

We can easily trick the brain out of the hard wiring and get out of our rivers of thought and make a new connection. A simple or small piece of stimulus can be enough to help with this.



Different roles in creativity

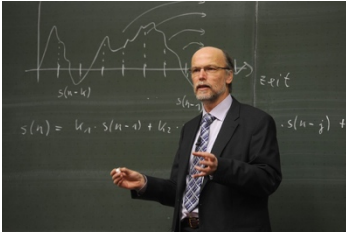
Another way for us to move out of convergent thinking, is to assign a little bit of process to a challenge and give ourselves (or other team members) roles to play when brainstorming solutions.

It is a small action that can be the stimulus needed to change convergent thinking (for example, asking yourself “What would my friend do in this situation” opens up whole avenues of thought and creativity). It is a simple way to question and refresh your streams of recognition.

The roles needed are:

- **The Conductor:** This role is neutral and looks after the whole brainstorm/group meeting, keeping everyone on track rather than getting involved in the detail. The conductor keeps a helicopter view of the discussion, and steers different types of thinking that might be lacking “it would be good to have less of the judge here, and more cheerleading”.
- **The Professor:** This role is all about details! The professor will question facts, figures, information, look at where there might be gaps in the ideas. The professor is there to question everything! They will also be the one with data at their fingertips, so allow them a laptop or phone to check facts if necessary.
- **The Fortune Teller:** On the flip side of the professor, the fortune teller focuses on intuition, feelings and emotions. The role allows the thinker to put forward a gut feeling without any need to justify it. "Being a fortune teller, this doesn't quite feel right to me." In a work environment, often we think that feelings and intuition can only be introduced into a discussion if they are supported by logic, however this negates that and can bring a different dimension to the brainstorm, which then furthers conversation.
- **The Cheerleader:** This role is all about brightness and optimism. What are the great things about this challenge or the ideas that have been put forward? Focuses on the benefits and possibilities.
- **The Artist:** This role is all about looking at different angles and possibilities, no matter “how out there” they are. This role allows pure creative and lateral thinking here!
- **The Judge:** This role is all about judgment and caution. This role will look at weaknesses and risks and will give logical reasons as to why things might not work.

All the roles are important and should be given equal airtime. However, it is all too easy to sit in judge mode (and is often a role we play more often in project meetings), so having a facilitator on hand to ensure the other roles are heard is vital. How the roles are used are totally flexible. Everyone can play the same role and then change after a few minutes in that mode of thinking, or each role can be assigned to an individual. If working a challenge on your own, then writing down thoughts and ideas under each role will come in useful and help with creative thinking.



Notes:

Mindsets

Carol Dweck is a Professor of Psychology at Stanford University, and is known for her work on the power of mindset. She discovered that people tend to either have growth or fixed mindsets in certain situations.

Growth mindsets embrace challenge, learn from feedback, focus on effort rather than the end goal and understands that talent and intellect can be improved upon.

Fixed mindsets tend to avoid challenge, hates receiving any sort of feedback, gives up easily and focuses on the end result as opposed to how they will get there.

It is worth noting that no-one has a 100% growth or 100% fixed mindset. Mindset is also context-specific. You can have a growth mindset regarding certain tasks and a fixed mindset tendency regarding others.

For example, you could hear someone say “I am good at sport and can get good at any sport (growth mindset) BUT I am terrible at art and can’t draw (fixed mindset)” or “I am a great motivator and can understand how to motivate anyone (growth) BUT Public speaking isn’t my thing. I’ll never be good at it (fixed)”

We don’t always recognise our mindset, but the more we focus on and develop a “can do” attitude to learning and success, the easier it will become.

With this in mind, our mindset can lead to convergent thinking, leading to a fixed mindset instead of a growth, creative one. Ways to recognise this might include:

- Tunnelled vision
- Spend too much time in “judge” role
- Focused on one result
- Sensitive about feedback
- Easily flustered
- May work in a silo-d approach
- Convinced their one river of thought is the right approach – unwilling to hear other ideas which may embrace divergence
- Fixed mindsets can lead to convergent thinking

Action Plan

Points to consider:

- When are you at your most creative? How can you harness this when you have been given a challenge to work on?
- How can you relax yourself to ensure you are in an alpha brain state when you need to be creative?
- What rivers of thinking do you get stuck in?
- How can you incorporate Serious Play into your work day?
- What small stimulus' can you use to ensure you don't get stuck in a particular river of thinking?
- How can you use the different roles of creativity to think differently about a challenge?
- How will you ensure a growth mindset going forward, even in the face of challenges?

Action	Priority	When by?

Action	Priority	When by?

Further Reading



Here is a selection of books on topics related to harnessing creativity that we recommend.

- **Flow: The Psychology of Happiness: The Classic Work on How to Achieve Happiness** - Mihaly Csikszentmihalyi
- **Lateral Thinking** – Edward De Bono
- **Serious Play: How the World's Best Companies Simulate to Innovate** - Michael Schrage
- **Innovation: The Five Disciplines for Creating What Customers Want** - Curtis R. Carlson, William W. Wilmot
- **Mindset** – Carol Dweck