A new model for supporting creativity in research organisations

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[Abstract] It is generally recognised that creativity is crucial in research organisations to enable breakthrough ideas and the discovery of new solutions that are novel, valuable and substantive. However, knowing how to cultivate a culture of creativity inside a research organisation is often not so clear. We present a new model, called the LCD Model, for supporting creativity in research organisations that builds on previous models, but emphasises the importance of the 'State of Being' of the researcher to enhance creativity and how that can be supported. The model aims to support sustained creativity and is derived from a number of empirical studies conducted over recent years as well as from personal experiences working in research organisations over the last twenty years. The model is explained in detail together with why each of the elements of the model is important based on our research findings and the findings of others. We also highlight the importance of the dynamic movement between the different elements to cultivate creativity, with the researcher's 'state of being' at the centre of the process. In conclusion, we discuss how the model can be implemented inside a research organisation to support and enhance the creativity of individual researchers and the research organisation as a whole.

1. Background

The industrial economic model has dominated western economies for the last 150 years. Driven by capital and labour (the workforce) the focus has been on productivity, efficiency and competition. This industrial economic model has also been supported by an education system tailored to meet these needs. However over the last few decades there have been significant changes happening that has challenged the effectiveness of this model. Firstly, there has been rapid technological change, particularly with the rise of the Internet, and this has opened up a whole new range of opportunities for collaboration and information sharing globally. The 'Asian Tigers', China and India are all playing major roles in the growth of the global economy. Secondly, the environmental challenges faced by all mean that new technological solutions are required to reduce energy usage, to change consumption patterns and to look at more sustainable ways of working.

Another worrying trend are the levels of stress and depression being reported by workers. Statistics from the World Health Organisation show that in Europe 27% of adults have experienced some form of mental disorder in the last year (including depression and anxiety). That equates to 83 million people in Europe being affected by mental ill health (WHO, 2014). In addition, "two-fifths of employers said stress-related sick days had gone up over the past year" as stated in the survey by the Chartered Institute of Personnel and Development (CIPD) and Simplyhealth (CIPD, 2012)

This combination of factors has had a significant impact on the focus for organisations moving forward. Organisations have to look at the new skills needed; the creativity required to find new solutions; how to reduce stress levels at work; and how to increase the level of enjoyment and fulfilment at work for staff.

A global study by IBM in 2010 of 5000 Chief Executive Officers (CEOs) across 60 countries and 33 industries found that creativity was selected as the "most crucial factor for future success" (IBM, 2010). Last year the South Korean government (2013) established a Creative Economy Action Plan to focus on what they call the new 'creative economy'.

"The global economy is moving away from labor and capital (industrial economy), and knowledge and information (knowledge economy), to 'innovation, technology and creative ideas' (creative economy)." (Korean Government, 2013)

The Creative Economy Action Plan also establishes a vision for 'Realizing a New Era of Happiness for the Korean People through a creative economy'. It is interesting to note that they include happiness as an important aspect of their vision.

Another survey, commissioned by Adobe in 2012, of 5,000 adults in the US, UK, Germany, France and Japan looking at attitudes and beliefs about creativity at work, school and home found that 80% of people felt that "creativity is key to driving economic growth". However less than half (39%) of the people surveyed saw themselves as being creative. The survey also found "a workplace creativity gap, where 75% of respondents said they are under growing pressure to be productive rather than creative, despite the fact that they are increasingly expected to think creatively on the job" (Adobe, 2012). This suggests that many people currently see creativity as being completely unrelated or maybe even the opposite to productivity.

We have found through running workshops with people from many organisations across business, education and government that there is some confusion on what creativity is and how it relates to their work and organization. For example, some people see creativity as just some fun thing to do when there is spare time but that would not have any impact on their own productivity. Often there is also an association of creativity with the creative industries and only being related to art and design disciplines.

The research literature does appear, however, to have a broad agreement on the definition of creativity and that is "the ability to produce work that is both novel and appropriate" (Sternberg and Lubart, 1999). Sternberg and Kaufman (2010) elaborated on this definition to highlight aspects of novelty and quality. "Creative work is original and somehow distinctive with respect to the work with which it is compared. The second element: quality, refers to the judgement from a reference group that the work is not merely novel, but also good, or perhaps even useful, according to that reference group" (Sternberg and Kaufman, 2010. pp.467). Boden (2004) categorizes creativity into Historical (HC) and Psychological creativity (PC) which she states: "P-creativity involves coming up with a surprising, valuable idea that's new to the person who comes up with it. It doesn't matter how many people have had that idea before. Whereas if a new idea is H-creative, that means that (so far as we know) no-one else has had it before: it has arisen for the first time in human history." (pp.1)

We believe this qualification of 'P' and 'H' creativity is important to keep in mind when defining creativity. Boden's definition encompasses both kinds of creativity; "Creativity is the ability to come up with ideas or artefacts that are new, surprising, and valuable." (p.1). Taking into account both the psychological or personal view as well as the historical view we therefore define creativity as 'the ability to come up with ideas or artefacts that are novel, valuable and substantive within a psychological or historical context'.

2. Creativity Challenges

Within research organisations it is generally recognised that creativity is needed to enable breakthrough ideas and discover new solutions that are novel, valuable and substantive. However through both personal experience of working in research organisations and through feedback we have received from interviews and discussions with researchers across a range of organisations throughout the world, there often seems to be a reality gap between statements from senior management saying "we must be more creative" and what actually happens on a daily basis. This has led us to ask whether this maybe due to a lack of understanding of how to truly cultivate and sustain creativity inside an organisation. Many organisations have tried to establish creativity initiatives, but they only often work for a short period of time.

Common feedback we get from people on the challenges they face in being more creative at work often relate to a perceived lack of time; financial support for developing new ideas; permission to take risks and to explore new ideas and new ways of working; and the fear of making mistakes. This matches findings from older studies (Hanks and Parry, 1992).

Carr (2011) argues that the ubiquitous access to people and information via the web and social media and our dependence on this all-pervasive technology is also having a negative impact on the time we give to deep thinking as we are constantly distracted. This is not always helped by working in open offices and the consequences of more distraction that culminate in an increase of stress (Mark et. al., 2005, 2008). Access to information and communication with others can be very beneficial to creativity, and a level of distraction in terms sparking new ideas and opportunities can also be useful. However if this is not balanced with time for reflection then this can have a negative impact on creativity. High stress levels can also narrow a person's perspective in terms of their focus of attention as well as their use of divergent information (Pennebaker, 1989) – a key aspect of creativity.

Another problem that often affects the creativity of many large organisations is the specialisation and isolation of different groups from each other (e.g. R&D, marketing, finance, design), often across different countries.

3. Creativity theories and processes

Research by Csikszentmihalyi (1996) and Amabile et al. (1996) found a common set of factors that can enhance the creativity of individuals in organisations. They included factors such as access to knowledge and the necessary tools; the importance of interaction with people from diverse backgrounds; the need for freedom of action; risk taking; the setting of challenging goals; and the time for "immersion in concentrated activity" that Csikszentmihalyi described as 'flow'. This implies the need for organisations to provide opportunities for communication and collaboration between different disciplines as well from other groups including (potential) end users/customers, stakeholders and other organisations. It also implies creating an environment that can support "immersion in concentrated activities" without distractions and gives individuals the time and freedom to explore new ideas.

Groves et al. (2010) looked at how twenty of the most innovative companies around the world designed their spaces to foster creativity and found they provided spaces that stimulate; spaces for reflection; spaces for collaboration; and spaces for play.

Another key area of research is the development of models and methodologies that describe and support the creative process. One of the earliest models describing the creative process was proposed by Wallas (1926). His model had 5 main stages:

1. Preparation - preparatory work focuses the individual's mind on the problem and explores the problem's dimensions;
2. Incubation - where the problem is internalized into the unconscious mind and nothing appears externally to be happening;
3. Intimation - the creative person gets a 'feeling' that a solution is on its way;
4. Illumination or insight - where the creative idea bursts forth from its preconscious processing into conscious awareness;
5. Verification - where the idea is consciously verified, elaborated, and then applied.

This model is still used as one of the most accepted stage models of creativity today and most other approaches build on this foundation. Two of the most interesting approaches to the creative process, 'Design Thinking' and 'Theory U', are described below.

3.1. Design thinking

The term 'design thinking' was coined by Kelley and Kelley (2013) to describe the process of creativity and innovation they use in their design consultancy, IDEO, and in the Design School in Stanford University. Their design thinking process has four main stages:

1. Inspiration – is about encouraging staff "to go out in the world and proactively seek experiences that will spark creative thinking." First of all this includes listening to and observing people. They emphasise the importance of empathy and "connecting with the needs, desires and motivations of real people" to help "inspire and provoke new ideas". This could be with (potential) customers, work colleagues, or other experts.
2. Synthesis – is the need to "recognise patterns, identify themes, and find meaning" from the information gathered in stage 1. Then it is about extracting key principles and frameworks and reframing the problem to choose where to focus.
3. Ideation/experimentation – is about "exploring a range of ideas without becoming too invested in only one". This stage is about rapidly prototyping ideas and getting feedback from end users and stakeholders. What emerges from these iterations of prototyping and feedback are "workable solutions".
4. Implementation – is about refining the design and preparing "a roadmap to the marketplace".

Kelley and Kelley (2013) describe design thinking as a "human-centred innovation" process and highlight three factors that must be balanced when creating new ideas of value. They are: desirability (human factors), feasibility (technical factors) and viability (business factors). Kelley and Kelley also talk about the importance of "creative confidence" and in their experience the biggest barrier to creativity is a person's "fear of failure". They highlight that there is often a misconception about creative people not having failures. They point out that this is not the case, however creative people see and manage failure differently - "an experiment ending in failure is not a failed experiment – as long as constructive learning is gained". The design thinking process also allows for experimentation and so "failure" is just part of the learning and creative process and allows for the development of creative confidence ("creative people simply do more experiments"). As Kelley and Kelley state: "If you want more success you have to be prepared to shrug off more failure" – you can also build confidence by having a series of small successes.

Design thinking has established itself as one of the main creativity processes followed by many of the world's leading research organisations. It is also the approach that I (Loudon) followed while at Ericsson Research in the design of mobile applications for US teenagers (Sacher and Loudon, 2002; Loudon et al., 2002), 3G smartphones (Loudon and Sacher, 2002; Loudon et al., 2002) and interactive Products for Chinese Consumers (Sacher et al., 2001). We have also recently used the design thinking approach to enable the generation and development of trauma care solutions in the Chongwe district of Zambia (Watkins et al., 2014).

3.2. Theory U

Theory U (Scharmer, 2009) is a "framework for learning, leading, innovating and profound systematic renewal" developed by Otto Sharmer at MIT (Sharmer and Kaufer, 2013). Theory U's proposition is "that the quality of the results in any kind of socioeconomic system is a function of the awareness that people in the system are operating from". Scharmer argues that creating new ideas of value

does not just depend on what is done or how it is done, but also on the "interior condition" of the person involved.

"We cannot transform the behaviour of systems unless we transform the quality of attention that people apply to their actions within those systems, both individually and collectively."

Scharmer introduces the idea of 'presencing' that combines sensing ("feeling the future possibility") and presence ("the state of being in the present moment") and highlights the importance of "letting go of the past in order to connect with and learn from emerging future possibilities". Scharmer's idea of 'presencing' links closely with Kelley and Kelley's use of empathy in their creative process. It also links back to Csikszentmihalyi's concept of 'flow'. Scharmer's Theory U process has three main stages:

1. Observation and immersion - in "the place of most potential, in the places that matter most to the situation you are in". Key aspects in this stage are to suspend judgments and to empathise with others.
2. Retreat and reflect – on all that has been learnt from stage 1 and uncover new ideas and opportunities through a period of stillness and contemplation.
3. Act in an instant – by exploring new ideas and opportunities through prototyping and feedback from all stakeholders.

Scharmer's Theory U process has many similarities with the design thinking process by Kelley and Kelley. The 2nd stage also links to Wallas's incubation stage. However, Scharmer puts more emphasis on the importance of the "interior condition" of the person involved in the creative process compared with the other two models.

4. Well-being and intrinsic motivation

The statistics presented earlier on the amount of 'stress related' and 'emotional' illnesses in the workplace highlight another key issue that needs to be addressed. Not just because of workdays lost and the responsibility of companies to look after the well-being of staff, but also because the well-being of staff is important for productivity and creativity. For example, research by Fredriksen (2002) highlights how the generation of creative ideas is affected by a person's emotional state.

Work by Ryan and Deci (2000) and Hennessey and Amabile (1989) show that the ideas of intrinsic motivation and self-determination have a positive affect on a person's well-being in the workplace. Amabile (1996) also highlights the importance of intrinsic motivation in the creative process. "The concept of intrinsic motivation is simply another way of saying that people are interested and enjoy what they are doing" (Cameron and Pierce, 2002). It is important to note however that the controlling nature of extrinsic motivation (common in many organisations) has been found to be detrimental to creativity (Amabile, 1996).

Pink (2010) gives examples of companies that have successfully incorporated aspects of self-determination and intrinsic motivation into their work practices. A classic example is 3M who introduced the '15% rule' allowing people to spend up to 15% of their time on projects of their own choosing or initiative. Google also allows their engineers to spend 20% of their work time on projects outside of their core job (Tan, 2013).

While I (Loudon) worked at the Apple-ISS Research Centre in Singapore, I was also allowed/encouraged to spend 20% of my time working on other research ideas. My main job was in the speech recognition research group, however in my spare time I worked on using some of the underlying speech recognition techniques to tackle the problem of cursive Chinese Handwriting Recognition. Luckily, I had a breakthrough in solving the problem (Loudon et al., 2003, 2005) and consequently this resulted in the technology being launched as part of Apple's Advanced Chinese Input Suite (ACIS) product as well we being licensed to several other companies.

Another interesting aspect of well-being and its link to creativity relates to the ideas of emotional intelligence described by Salovey and Mayer (1990). They define emotional intelligence as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions".

This has been developed by Tan (2013) at Google where he has developed a mindfulness training programme for all Google employees called "Search Inside Yourself" to help "increase productivity, creativity and happiness" amongst its staff. Tan defines mindfulness as "paying attention in a particular way: on purpose, in the present moment, and non-judgmentally" and is used to improve the "quality of attention" of staff.

This idea of strengthening the emotional intelligence of staff to cultivate their 'quality of attention' and their ability to monitor their own and other's feelings and emotions links back to one of the core aspects of Design Thinking and Theory U – that is the importance of 'empathy'.

4. Our research studies

We have conducted a range of studies over the last few years into different factors and processes affecting creativity. Our results show two key factors have a strong relationship with creativity. They are a person's 'State of Being' and 'Dynamic Movement' (Deininger, 2013; Deininger, 2012; Deininger and Loudon, 2011; Loudon and Deininger, 2012; Loudon et al, 2012). We define 'State of Being' as the emotional, mental and physiological condition of a person, and 'Dynamic Movement' as the continuous motion of personal experience that is of a non-linear and spontaneous nature.

We also found a strong relationship with self-determination / intrinsic motivation and the natural tendency for people to interact with the physical world (Deininger, 2013; Deininger et al., 2012). Self-determination was shown as an incredibly important

aspect of creativity as it created a space for a person to explore and play. Often times, if people were directed to a particular creative task and 'guided' on how they should explore that task, their intrinsic motivation would decrease.

We measured a person's 'state of being' during a range of creativity tasks through a combination of qualitative methods by getting participants to be self-aware of their own 'state of being'. We also began exploring 'state of being' quantitatively through the recording of participants' Heart Rate Variability (HRV). Heart rate variability (HRV) is the variation in the time interval between heartbeats, specifically the variation in RR intervals of the Electrocardiogram (ECG). HRV has been shown to be one of the most promising methods for measuring Autonomic Nervous System (ANS) activity (Malik, 1996) and has been used for years as a way to determine foetal well being (Romano et al., 2005). It has also been shown that there is a link between mental states and HRV (McCraty et.al, 1995). The possibility of being able to quantitatively measure 'state of being' in relation to creativity is an exciting new area of research that we plan to continue to explore.

5. LCD model for creativity

As a consequence of our research work, our personal experiences and the research of others, in particular the work on design thinking by Kelley and Kelley (2013), Theory U by Scharmer (2009) as well as the ideas of Csikszentmihalyi (1996), Amabile (1996) and Tan (2013) we have developed what we call the LCD (Listen, Connect, Do) Model for creativity, as shown in Figure 1 below.
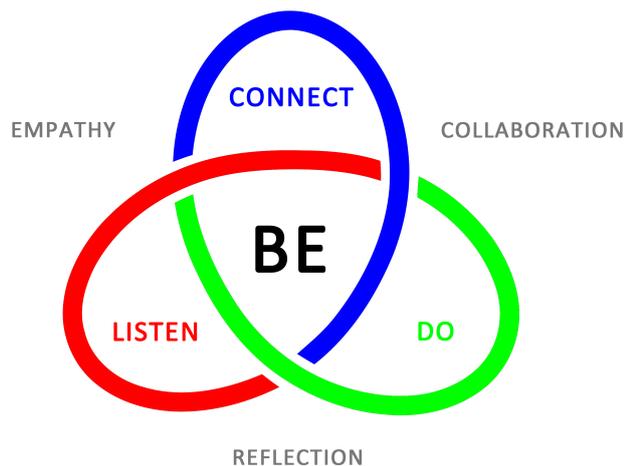

Figure 1. The LCD Model.

The LCD model puts a person's 'state of being' at the centre of the approach and highlights how it underpins other key aspects of creativity including listening, connecting, and doing, i.e. you need to BE creative.

5.1. Listening

In our LCD model, listening implies listening to (and observing) others as well as to our own selves, i.e. being self-aware of our own 'state of being'. This links to the ideas of empathy and being aware of the feelings, needs and concerns of others, as described by Kelley and Kelley (2013) in their design thinking model, to help gain new creative insights. It also links to their ideas of reflection and gaining feedback from people on ideas being developed. However our listening also brings in the ideas by Scharmer (2009) in his Theory U and the work by Tan (2013) on mindfulness on being able to listen to our own emotional, mental and physiological condition as well. We know that stress narrows our focus of attention and stops us from being able to process peripheral cues in our environment (Pennebaker, 1989). Another common tendency when listening to others is to look for evidence to support what we already believe. Listening in our LCD model addresses these issues, as it requires a person to be open, aware, and attentive to their own 'state of being' as well as to that of others. It also requires a person to question their own views and attitudes when listening to others. This is extremely important, as listening alone without paying attention to our own 'state of being' can limit the insights gained and as a consequence limit creativity.

5.2 Connecting

Our concept of connecting has several aspects. Firstly, it implies engaging with others and being open to connecting with people we haven't previously considered connecting with. This includes connecting (and collaborating) with people from different disciplines as well as key stakeholders and (potential) end users, as described in the 'design thinking' model. However it also includes giving more opportunities for serendipitous connections. A good example of where these ideas of serendipitous connections have been very successfully developed is in co-working spaces (Fuzi et al., 2014) where people from a range of disciplines co-locate for work and through these co-locations discover new unexpected ideas and make new connections. An advantage of the co-working model is that it is able to overcome some of the problems associated with specialist research hubs. Our concept of connecting again brings in the aspect of being self-aware of our own emotional, mental and physiological condition while connecting with others, and being open, aware, and attentive to new ideas and opportunities.

Another aspect of our connecting relates to the ideas of divergent thinking. Divergent thinking is defined as the exploration of many possible answers rather than thinking toward one right answer (convergent thinking) (Guilford, 1950) and has been recognized for many areas as a key component of creativity. It is very important to stay open minded to many different possibilities and to allow for the connecting together of seemingly unrelated ideas. Our research shows that those unusual connections happen more frequently when a person is in a more 'coherent

state', where we define a coherent state as a state of cohesiveness, openness and mental stillness (Deininger, 2013). This relates to the illumination stage of the creative process as described by Wallas (1926) and the 'aha moment'. Through the many workshops we have run over the years with people from business, education and government we commonly ask 'when and where do you have your best ideas?' The most common answers we get are 'while walking', 'having a shower', 'chatting to someone', 'driving', 'while in bed' or 'after a glass of wine'. In all the workshops we have run we have never heard 'sitting at my office desk'. We would argue that this is because the commonality amongst those answers is the person's 'coherent state'. Therefore, again, our 'state of being' has to be central to the process of connecting.

5.3 Doing

Doing relates to taking action, exploring, experimenting and prototyping as described in the 'design thinking' model. However again our concept of doing also brings in the importance of being aware of our 'state of being' while doing. Dow et al. (2009) found in their studies that prototyping alone "did not necessarily explore a variety of concepts" (i.e. divergent thinking) and participants generally "selected an initial design direction and iterated to improve on that idea", with some participants being seemingly unaware that there were many possible design solutions to the problem. Research by Wujec (2010) found similar results with his Marshmallow challenge where teams had to build a tower made of spaghetti with a marshmallow on top. On average, 'graduates of kindergarten' out performed most adults because they employed divergent thinking techniques more so than adults who tried to find the one right answer (convergent thinking). Our concept of doing is not just about experimenting and prototyping but also being mindful of our own 'state of being'. What we have found in our research is that when people 'played' it brought experimenting and prototyping together with divergent thinking. Play is often defined as being a spontaneous activity that is joyful, having the absence of consequences and the removal of constraint (Gordon, 2008; Lieberman, 1977). Brown and Vaughan (2010) describe play as being an altered state, exploring the possible in which joyful emergence occurs. Michael Schrage (1999) also talks about the importance of integrating play into the design and development process and its relation to prototyping. We therefore see play as taking action, exploring, experimenting and prototyping (doing) while in a coherent state. Play gives people permission to explore ideas in a non-linear manner including the exploration of ideas that might seem totally unrelated to the challenge at hand. It also creates the opportunity for making unusual connections while being in a more coherent state and therefore enables new insights to emerge.

5.4 Dynamic movement and 'state of being'

The LCD model not only focuses on listening, connecting and doing with a person's 'state of being' at the centre but also emphasises the importance of the dynamic movement between these aspects. This continuous movement is non-linear and spontaneous in nature. We deliberately chose the symbol of a trefoil knot for the LCD model rather than overlapping circles as we want to convey that it is a 'non-trivial' knot and that it is not possible to untie the different elements – each element is indelibly linked to the other. This is quite different from how previous models have been presented with their more linearly staged processes. It is also important to emphasise that the central space of the LCD model represents a person's 'state of being'. Our three aspects of listening, connecting and doing cannot occur without this central space. Research organisations must therefore give permission for their employees to be in this central space for listening, connecting and doing to happen.

6. Implementation for research organisations

One of the first major challenges for any research organisation, (particularly in the commercial sector) is to clarify what creativity means for them and to address the current disconnect that many people seem to feel between productivity on the one side and creativity on the other (Adobe, 2012). For the LCD model of creativity to be successfully applied inside a research organisation there needs to be an acceptance that creativity is an incredibly important element of productivity.

A second key aspect that research organisations need to look at is their organisational structure and the physical locations of research staff. All leading research into creativity highlights the importance of interaction with people from diverse backgrounds. This includes interaction with people from different parts of the organisation (e.g. marketing, finance, design, product development) as well as other key stakeholders including (potential) end users. Having isolated technical research groups will significantly limit creativity. This can also be a challenge for some academic research organisations that are not connected with the commercial world. In the LCD model, this is emphasised through our listening and connecting elements and the importance of using empathy to understand the needs, desires and motivations of people, but by also making sure that staff are aware of their own emotional, mental and physiological condition as well. Practical ways to make this happen in a research organisation is to give staff time and permission to get out of their office or lab on a regular basis and go into the field to meet a range of different people, listen to what they have to say and observe what they currently do and use. Another solution could be to get staff to join local co-working spaces to meet new people or setup a co-working space inside the research organisation itself (Fuzi et al., 2014).

A third key aspect relates to a person's 'state of being' and the importance of autonomy and self-determination where staff have permission, time and the necessary resources to explore new ideas that they are motivated by.

In this regard, there are businesses already out there that are allowing some of these elements to occur, e.g. Google and 3M. However, the concept of the 'state of being' goes beyond giving time for exploring new ideas, it also challenges the perceptions of 'doing work'. Staff often feel pressure to 'do stuff' and to be seen to be busy. However it is important to recognise that time is needed for reflection and stillness in order to come up with new ideas or artefacts of value and substance. In practice this might mean creating a culture inside the research organisation where staff are allowed/encouraged to go for long walks or allowed to have periods of down time. It could also mean setting up spaces for quiet reflection.

A fourth key aspect is the non-linear and spontaneous nature of creativity as expressed in the LCD Model's trefoil knot. If research organisations impose too much linear structure on the creative process (from stage to stage) this can restrict and limit the opportunity for making significant breakthroughs. Sometimes it is important to allow researchers to pursue vastly different directions at the same time and not always emphasise a planned step-by-step approach. This takes trust but can be extremely rewarding in the long term.

A fifth aspect is the importance of courage. Creativity implies doing things differently from the rest and this requires courage. Creativity also means addressing the fear of failure. No research organisation wants to spend large amounts of money and time totally failing. However, the creative process requires an iterative process of experimentation (including experiments that fail) and reflection to end up with new ideas and solutions of value. The LCD model tries to manage this natural fear of failure by encouraging staff to learn through play.

A research organisation that embraces the LCD model of creativity would give employees the opportunity to understand themselves, their natural preferences for working and what motivates them, through a series of profiling exercises. The office culture would provide an opportunity for people to take time to reflect and become aware of their 'state of being'. This could be through using tools, dialogue or self reflection.

Play spaces would be available; this is not just a physical room that people could 'play' in but also a mental space that is allowed for people to play with ideas and concepts. An acceptance and understanding for a non-linear unfolding of ideas would be the 'norm' of the office culture, rather than a rare event.

Time and space would be allowed for people to incorporate all elements of the LCD model including the dynamic movement between listening, connecting, doing with the person's 'state of being' at the centre. This would mean that people would possibly spend less physical time in the office but with technology they could still be available when needed. Some of this is already happening in some of the leading businesses around the world where people are now able to have 'work from home days' and there are some companies that see the benefit of play (Schrage, 1999; Groves et al., 2010). However there is still a huge chasm between the perception of productivity and creativity for many organisations. Perhaps this chasm will only be breeched when more research organisations

show that these two concepts are more closely related than most people think and allow for great things to happen using an approach such as the LCD model.

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