‘Creativity for Life not just for Christmas’; promoting the 3T’s of Creativity as a vehicle for Organisational Sustainability and Development.

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Introduction

This paper proposes that teaching creativity through the use of the 3 T’s framework and generating eco-systems comprising educators, business and wider society could be used a framework to enhance current business models of sustainability. Using creativity can lead to and greatly enhance sustainable environmental and organisational advantage. This occurs when creative problem solving techniques are deployed in a supportive eco-system that facilitates adaptive and social learning and engenders synergetic advantage. It is proposed that using transformative and creative techniques engenders multiple loops of learning, leading to new and challenging methods and processes through which we can sustain existing systems and generate new ones.

Creative ability is considered a core component of encouraging, actualising and enhancing environmental sustainability (Kaufmann & Beghetto, 2013, Withagen & Kamp 2017, Cheng 2018). The development of an adaptive ecosystem between society, education and the workplace provides a habitus for creative learning, which can result in the development of alternative thoughts, actions and routines and ultimately increase organisational effectiveness and sustainability (Jackson 2015, Drady forthcoming PhD, 2019).

This paper is a natural extension and contextualisation of my PhD study in which I focussed upon examining the ongoing impact of a creativity module and the reported effects it had on both the individual (in terms of increased confidence and freedom to act) and also their employers in terms of changes that were subsequently facilitated and implemented on their return to their workplaces. More effective and efficient organisational routines were reported after module/ intervention, even though follow up was done up to a decade later, thus suggesting some existence of life-wide creative change had resulted.

The format of this article will initially examine why creativity should be considered an essential element for organisational and environmental sustainability. Next, details of my research and how I came to build my metaphorical lens of creativity, the 3 T's of Creativity will be examined, and why the authors believe firstly that the lens is transferrable, and secondly how it can be used to aid and enhance how creativity is taught and how it can be used for the development of creativity thinking across other domains.

Why is Creativity essential in engendering Environmental Sustainability?

Despite the United Nations pledge in 2015 to adopt the '2030 Agenda for Sustainable Development' and secondly, the fact that our human development and growth is dependent on the effective utilisation of nature and its resources both non-living (abiotic) natural and the processes we used to develop them; sustainability as a core subject is still neglected by leading national and international policy makers (Brilha, Gray, Pereira, & Pereira, 2018).

'Sustainability' as a concept is difficult to define, and debate as to what it actually means (Morelli, 2010). He believes that the term has become a buzz word for anything that claims to be good. Costanza (1995) ascribes to the 'three-legged approach' a simultaneous benefit to the economy, society and the environment. In contrast Robinson (2004) views it as a relationship between human society and nature noting that sustainability has value only when prefixed with a specific discipline. Callicot and Mumford (1997) consider *'ecological sustainability'* as a means of connecting human needs and meeting them using ecosystem services without compromising or damaging the ecosystem. Whereas *'economic sustainability'* is considered as future generations are not burdened or disadvantaged from current activity. *'Ecological sustainability'* seeks to preserve minimum physical environmental assets. McKenzie (2004) describes *'social sustainability'* as a positive condition within communities comprising equity of access to services for all, between different generations and cultures, and creating community ownership, and environmental championing (Markusson (2009). Environmental Championing is simply any effort by an individual or group to promote environmental issues. *'Environmental sustainability'* as a subset of ecological sustainability, where balance exists and interconnectivity of all the elements is key. Although the goal of the environmental manager per say was acting usually on an independent basis on behalf of the community. Traditionally something described as 'environmental' was associated with human impact on a natural system, distinguishing it from ' ecological' which is characterised by an independence of elements within a system. Morelli

was the first to suggest an interdependence between all of these elements, and in doing this classifies

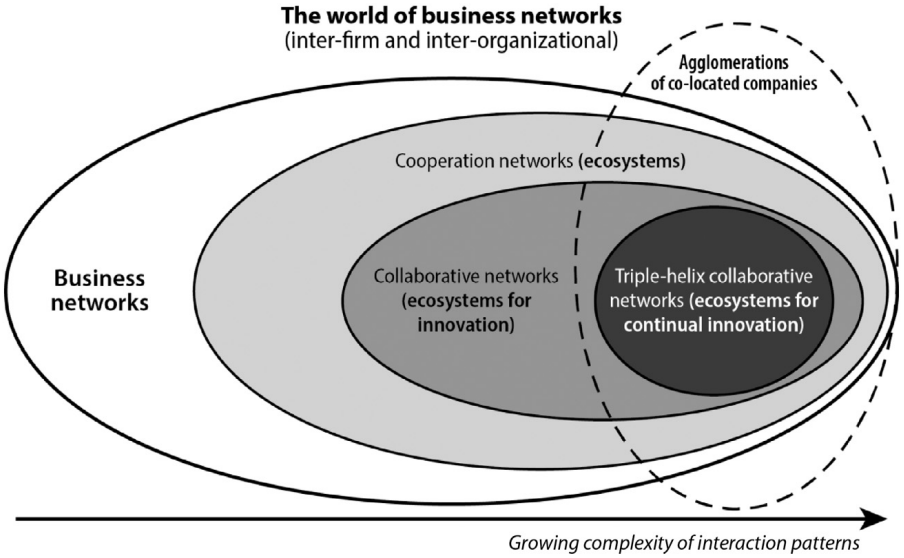
Having defined it and considered its complex nature, why is environmental and organisational sustainability of such interest? The interest derives from the inability of current business models to be considered fit for purpose in the future. The design principle for sustainability is sustainable development, which argues for the integration of economic, environmental, and social considerations to achieve enduring progress (Cavicchi, 2018). In business, this principle is often referred to as the 'triple bottom line', which encourages formulating solutions and decision making grounded on the interconnected relationships among profit, planet, and people (Slaper & Hall, 2011).

A small handful of academics, policy makers, and industry practitioners have advocated how creativity may have contributed to sustainable practices across several domains for example in Business (Kaufmann & Beghetto, 2013; Withagen and van de Kamp, 2017; Cheng 2018, Lim (2016) in Tourism, Cavicchi (2018) in the Energy sector, Bergholm (2018) in Education, and Mammadova, (2017) in Agriculture in to name but a few. Many different sectors are all agreed on the need for new business models in sustainability to deal with peculiarities existent in every industry. The common demand is for a dynamic ecosystem that develops and evolves in line with the changes requirements of stakeholders, markets and environments. Lim (2016) believes that there is a need to identify and develop mechanisms that facilitates sustainable and enduring initiatives that will address currently unresolved issues. Greater sustainability involves the continued investment and focus on progressing holistic approaches to managing sustainability issues, unresolved problems related to sustainability, concentrated around the as yet relatively under developed area of using creative techniques to design and deliver environmental sustainability.

The common denominator is the combined use of an eco-system design to enable personal and organisational developments to occur and develop sustainable organisation growth strategies for the future. Russell & Smorodinskaya (2018) describe such ecosystems which they state are characterised by changing multi-faceted actors and ongoing and persistent structural transformations facilitated by the growth organizational complexity of the economies they represent. They are characterised by their adaptation ability to the high levels of uncertainty they depict, and the central role of collaboration they require to sustain. They compare complexity thinking of modern economies (ecosystem design), with

traditional thinking conceived for industrial and suggest why traditional approaches are no longer effective.

The need for development of collaborative eco-systems is illustrated by Russell & Smorodinskaya (2018).



Cooperation networks based upon the development of mutual activities shapes a sustainable ecosystem of interactive linkages. Linkages can be located inside or inter-organizational and play a supporting role in facilitating and sustaining innovation-led growth. Cooperation networks enable new actors to emerge and also others to leave. Sociological literature on networks posits that the formation of a sustainable ecosystem happens at the moment when a spontaneous distribution of horizontal linkages per node in the given network reaches a certain critical level (Barabási, 2002). They believe ecosystems are essentially the result and derivative of collaboration-type interactions, emerging when cooperating actors have achieved a certain level of integration resulting in joint identity, joint strategy and joint goals.
I propose that by then supplementing the ecology with the teaching and learning of creative techniques, (The 3 T's of Creativity) the environment is then sufficiently fertile to accept and enhance the encouragement and adoption of the new techniques that will be conceived and developed.

Facilitating creative development in Business

Creativity is defined as a complex activity consisting of a special form of problem solving resulting in something new and valuable (Bonnardel & Marmeche, 2005; Ott& Pozzi, 2010). Traditionally creativity derived from the notion of 'thinking outside the box' a 1926 puzzle comprising 9 dots.); in

order to solve the puzzle one needs to go out of the box, essentially requiring that people approach the problem differently and unconventionally. More recently creativity in business was endorsed and has been described as a key contributor to economic growth (Ferrari, Cachia & Punie, 2010, Henley, 2018, Tang et al, 2018). As early as 2006, Yorke suggested '*future creatives*' were considered essential to the survival of a business. Florida and Goodnight, (2006) described creative individuals as an '*engine for economic growth'*. Harvard Business Review (2010) stated traditional skills and competences are no longer sufficient 'multi-competent graduates' are required to impact organisations. Rostad and Mohn (2006) described creativity as a 'realcompetence' combining innovation and experience and more recently Withagen & Kamp (2017) and Cheng (2018) believing it is essential to environment and organisational sustainability. There are real advantages for Entrepreneurs and in Business Development through creative teaching derived from social learning situations and team creativity.

Teaching Creative Techniques

Jackson (2014) spoke about the 'wicked challenge' (pg 8) facing educators to prepare students for the complex and dynamic environments they are now facing, challenging educators and teachers to create an environment that facilitates and encourages sustainable creativity in an Education sector where more often than not it is discouraged. In his book entitled 'Exploring Learning Ecologies' Jackson (2015) introduced the concept of an eco-system to describe the creative learning process. The ecology metaphor enables creative thoughts, actions and behaviours to be explored in an environment that is both adaptive and dynamic over time. A creative pedagogy that can help creativity develop and flourish. He encourages the creation of 'Lifewide' creative skill where learned skills and techniques are transferrable. Lifewide learning can incorporate all types of learning, from that developed in a formal environment, which can be managed or self-directed, but also include unintentional or unintended informal learning that is driven by intrinsic value (Jackson 2014).

Jackson (2015) Universities today are a constellation of ecologies, knowledge, economic and environmental. The University and its educators must understand the unfolding environment allowing not only sustenance of current practices but also ensuring the growth of sustainability. An ecology facilitates the continuous nature of developing ideas, in alignment

with learning environment and its agents and their goals, multilevel and adaptable Business models of this nature are lacking in terms of sustainability. Such models consider and accommodate liminality, and have the characteristics of transformative management, to enable and embrace the teaching and learning of creativity then it needs to display an academic freedom that moves away from prescriptive and restricting learning outcomes to the development of self-devised and emergent outcomes. (Kleinman 2009, Armstrong 2014)

Jackson's (2015) work on creative ecosystems opened the door to a wider and broader meaning, one such area of development has been the use of creativity in the creation sustainable business models. Kaufman & Beghetto (2013); Withagen and & Kamp, (2017) and Cheng (2018) all claim that creative approaches are essential going forward, and they are best served by developing and ecosystem that incorporates both educators and business leaders as only jointly can they address the challenges of today.

I believe that teaching creativity is the missing jig saw piece. Creativity is a transferable skill (Craft 2005) which will enable environmental and systems developers to consider their current processes and practices through a new lens. I therefore propose that my metaphorical lens of the 3 T's of Creativity (Techniques, Transfer and Transformation will provide a framework to aid understanding and allow the benefits of teaching creative techniques across disciplines to be utilised.

The techniques included in the module are included in the table below.

Technique	Characteristics
Problem Solving	Looks at what is a problem, how to address problems, solving, resolving and dissolving problems. Simple and complex problems.
Creative Problem Solving	Examining none routine problems, those which don't have an obvious solution. Examples include the 9 dots, the broken clock, hobbits and Orc's etc

Brainstorming and Its Variants	Starting with simple brainstorming and the rules, also look at stop, start brainstorming, round robin, brain liming and brain writing. And Gordon Little method.
DeBono's 6 Thinking Hats	This examines the different roles individuals take on, they are represented by coloured hats which represent a set of values and behaviours.
Morphological Analysis	This is where we look at changing perception of objects and changing them into other things, involves examining Images Perceptions and metaphors and an introduction to analogy and personification. Force Fit Triggers
Attributional Listing	This is a technique used for innovation and updating and revising products. Existing products are broken down into their various component parts and then these are altered, substituted, complimented and changed to new products. SCAMPER model
Synectics	This is the most advanced of the techniques used, it is about making familiar objects and contexts unfamiliar and the unfamiliar familiar. It involves facilitating excursions to fantasy lands and then using the environment of the fantasy excursion to solve problems.

The aim of the study was to explore any perceived benefit over time which students attributed to the creativity module/intervention, the research followed several anecdotal accounts claiming students had changed the way they thought and behaved following attending a creativity intervention. This was done by assessing personal accounts of learning transfer and transformation following the intervention. To see if changes were apparent to see if creative techniques that students were still using were transferred as taught, or are they changed or transformed.

The research was exploratory and interpretivist (Holloway 1997, Mason 1996, Hycner 1999 & Cresswell 1994) utilizing life histories (Langer 2016, Chaloupka & Koppi 1998) with a bricolage approach (Denzil & Lincoln 2000, Kincheloe 2005). I interviewed 4 participants using vignettes to record their 'lived experiences' verbatim (Langer 2016, Chaloupka & Koppi 1998).

A metaphoric approach is adopted that consider whether creativity is about '*colouring between the lines*,' when in fact creativity is being able to COLOUR OVER or OUTSIDE the lines. As a child we are taught it is essential to colour inside the lines so as not to be 'messy.' Society's protocol requires precision and care and to colour neatly within the lines. One could argue colouring beyond the lines is creative and ground breaking.

Developing a 'lens' of creativity (The 3 T's of Creativity)

Having conceptualised the idea that creativity could be described as 'colouring over/ outside the lines', it seemed a natural step for me to link this idea to the techniques that I was teaching. In designing my visual interpretation (lens) of the creative process I decided individual techniques would be represented by a single colour, likened to a simple process model comprising inputs, throughputs and outputs. The first (inputs) on the left side of my visual lens, red represents brainstorming, orange De Bono's 6 thinking hats, green morphological analysis, light blue perceptions and metaphors, navy blue Force Fit Triggers and purple synectics.

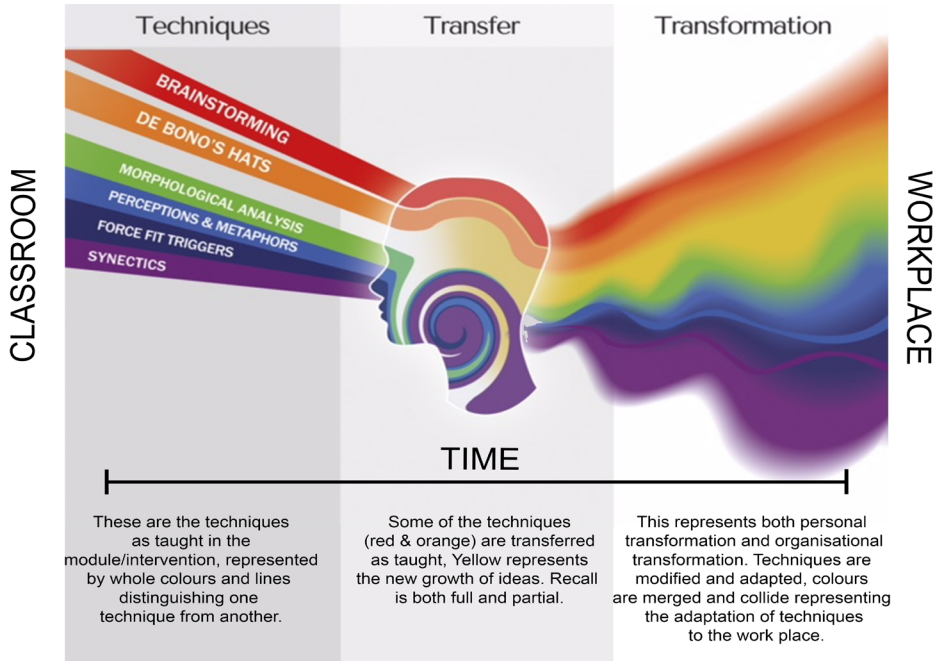
The area in the middle of the lens is a head, this is where learning transfer occurs. The individual cognitively processes the information (techniques) taught choosing to retain or forget as the information is unnecessary. The process here is individual, highly complex but are in the main influenced by culture, up-bringing, personal experiences past and present, prior knowledge, perceived interest in material presented and perceived value of the lens. Some techniques are transferred as taught, such as Brainstorming and or De Bono's 6 hats. These colours enter the head from the left as inputs – the techniques taught and then are individually cognitively processed in the head and then leave the head on the largely unchanged, ie the techniques appear later in the workplace as they were taught, unchanged. right (illustrated in red and orange). Whereas the other techniques appear to have been changed during cognitive processing and appear as different shades of colour or merged colours on leaving the head, and appear as wavy lines representing the transformation they have undergone.

The right hand side of the lens represents the transformation that an individual reportedly experienced as a result of the intervention and the new and more fluid colours emerging without any of the boundary lines representing the increased personal confidence and freedom reported by

the participants after the intervention. This representation is indicative of mixed/adapted version of the techniques now being used to meet the needs of the individual workplaces where they are used. Findings suggest that the creativity intervention has transformed individual thinking and giving participants newly found confidence (that they state they previously didn't have) allowing them and to challenge the status quo with new ideas. Perhaps it's time to consider colouring outside of the lines?

The timeline depicts the ongoing and fluid nature of the study as time between delivery and recall, classroom to workplace.

The 3 T's of Creativity – a metaphorical lens of understanding.



The timeline depicts the ongoing and fluid nature of the study as time between delivery and recall, classroom to workplace.
The new found freedom and confidence to try new things and create new and different routines in the workplace reported by participants can be likened to what Rostad and Mohn (2006) referred to this as 'realcompetence' a concept conceived by combining existing experience and knowledge from their roles alongside the creative techniques taught resulting in examples of ongoing impact and increased organisational effectiveness.

The paper proposes a metaphorical 'lens' which enlightens and broadens understanding of the process and transfer of creative learning techniques from classroom to workplace; an area relatively un-researched. This 3 T's of creativity, outline, the transfer of techniques from classroom to workplace and the transformed systems that result (Drady, forthcoming PhD 2019).

The lens highlights the potential benefits of teaching creativity evidenced in the workplace for all educators and practitioners.

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