Is Creativity Teachable? Conceptualising the creativity/pedagogy relationship in higher education

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Abstract:

Can creativity be taught? If so, what should university teachers be doing if it is to be added to a burgeoning list of graduate outcomes for which we take pedagogical responsibility?
This paper argues the importance of engaging with this issue in higher education at this time. It does so by exploring reasons for the growing interest in creativity as a learning outcome, elaborating key imperatives in the post-millennial ideational and policy context. The paper then moves to consider questions of the teachability of creativity and the pedagogical implications of this. In doing, the author makes a case that, while it may not be possible or desirable to render all aspects of student creativity calculable as learning outcomes, creativity can better understood and mobilized in all disciplines through newly emergent learning cultures and forms of pedagogical work.

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Can creativity be taught? If so, what should university teachers be doing if it is to be added to a burgeoning list of graduate outcomes for which we take pedagogical responsibility? As is usual in contested definitional domains, the academic answer to this question seems to be 'yes and no'. Yes, some aspects of creativity appear to be teachable – thinking and application skills that are amenable to acquisition can be developed through appropriate pedagogies. And no, some aspects of creativity remain idiosyncratic and mysterious, despite the plethora of research literature that is dedicated to pinning the frog of creative endeavour.

Before exploring more fully the creativity/pedagogy nexus, I want to indicate the importance of paying attention to this issue in higher education at this time. In broad terms, the nexus of creativity and higher education pedagogy has been brought to the fore by a growing interest in (a) understanding the precise nature of creativity, (b) asserting the link between creativity and economic productivity, (c) calling for a greater focus on creativity in higher education policy (particularly in the UK) and (d) provocations about what precisely pedagogy *for* creative capacity building might look like. In what follows I set out some key ideas from this ideational and policy context before moving closer to questions of teachability and pedagogy. In doing so I seek to make a case that creativity is more than just fashionable - there is a growing body of evidence to suggest that it is already one of the key drivers of commercial success and social betterment. By implication, universities should be teaching those aspects of creativity that are amenable to being learned.

Towards a definition

As a late-comer to the field of creativity, arriving somewhat obliquely via the field of pedagogy, I have observed the amorphous nature of what counts as 'creativity' in the literature and the energetic investment in its clarification through predominantly psychology-based research modelling. Richard Greene's (2007) recent review of 552 "psych-lit database" (p.2) articles on creativity written since 1996, is an example of such excited endeavour. In his work, Greene echoes a widespread anxiety that the field is characterised by theoretical models "so attenuated, extenuated, or misunderstood that operationalising of the key concepts is missing or impossible" (p.2).

At a recent conference taking up the theme of creativity in higher education, I observed this phenomenon in action, as various speakers pushed and pulled creativity like the Pope's robes to cover their favourite knowledge object (social justice, trans-disciplinarity, learning styles, urban savvy, digital literacy, individual talent and so on). Greene's attempt at a corrective is a project daunting in its scope, a meta-model of 42 models of creativity, consisting of 7 types of models, with six models in each type, and 13 types of 303 variables. I want both to acknowledge the enormity of this project and to indicate that I do not intend any synthesis or critique of Greene's meta-

model, nor do I intend to develop a rival meta-model. I merely point out the quantity of work now being done to bring "order, focus and convergence" to the field (p.3).

Notwithstanding academic longing for a theory or model for everything, creativity continues to be regarded by many both within and outside academic circles as so mysterious and serendipitous that it defies definition, and thus also defies any attempt to foster it systematically. Moreover, it is still widely held that creativity is only relevant to a small percentage of graduates as future professional workers. Recent research has challenged these propositions as myths, asserting that creative capacity is an increasingly observable and valuable component of social and economic enterprise (Tori-Haring-Smith, 2006; Cunningham, 2005; 2006; Hartley, 2004). It is not garnish to the productivity roast, but fundamental to an increasingly complex, challenge-ridden and rapidly changing economic and social order. In Mihaly Csikszentmihalyi's (2006) terms, creativity is "no longer a luxury for the few, but…a necessity for all" (p.xviii).

Learning theorists have added their voices to the de-mystification project, in arguing that creativity consists of three components - domain relevant skills, creative processes, and intrinsic task motivation – all of which can be fostered through formal and informal learning (Sternberg, 2007; Robinson, 2000; Simonton, 2000). While highly individual motivation for creativity is likely to continue to defy neuro-scientific 'discovery', at least in the short to medium term, there is some consensus around the view that creativity works as both a way of thinking "associated with intuition, inspiration, imagination, ingenuity and insight" and "a novel and appropriate response to an open-ended task" (Byron, 2007). Stephen Bowkett (2005), author of *100 Ideas for Teaching Creatively*, provides an interesting take on this, suggesting following Kieran Egan, that creativity may mark a fifth 'phase of life' category beyond *Somatic*, *Mythic*, *Romantic* and *Philosophical* - an *Ironic* phase of examining, questioning, doubting and reconstructing frameworks in a spirit of curiosity, playfulness and experience (p.11). This has resonances with what Greene names as the "paradox balancing models" of creativity, in that the "combining of opposites" (p.12) that characterises this 'type' of creativity is also the marker of the ironist, one who enjoys demonstrating both and neither of two apparently contrary propositions are necessary and true (Rorty, 1989).

In similar vein, it has also been posited from outside the field of psychology that the sort of creativity that leads to innovative organisational practice is more likely to be *an outcome of adaptation* – new re-combinations of what currently exists (see Leadbeater, 1999; Lessig, 2005) – than of 'flash-of-inspiration' moments or the radical invention of something out of nothing. This builds on understandings first made public some decades ago in Arthur Koestler's *The Act of Creation* (1964), in which he identified the decisive phase of creativity as the capacity to "perceive… a situation or event in two habitually incompatible associative contexts" (p.95). Following Koestler, the capacity to select, re-shuffle, combine, or synthesise already existing facts ideas, faculties and skills in original ways may be understood to be evidence of creativity at work. David Perkins makes a similar point in *The Mind's Best Work* (1981), insisting that skills like pattern recognition, creation of analogies and mental models, the ability to cross domains, exploration of alternatives, knowledge of schema for problem-solving, fluency of thought and so on, are all indicators of creativity as a set of learning dispositions or cognitive habits.

A further important perspective has been added to the definitional work, namely Csikszentmihalyi's (1999) insistence on *the community, not the individual*, as the unit that matters when seeking to foster creativity. By implication, this proposition challenges conceptions of creativity that are limited to personal psychological traits. This pluralisation of the unit of analysis of creativity raises substantial issues for higher education if graduate attributes continue to be understood and measured in predominantly individualised ways. It indicates that the student *cohort or community of learners* is the unit to which creative capacity may be more appropriately attributed, not the individual graduate.

All these recent scholastic moves to *unhook creativity from 'artiness', individual genius* and *idiosyncrasy*, and to render it *economically valuable, team- or community-based, observable and learnable*, make it difficult for academics to step around creativity's challenge to orthodox teaching and learning. They move us on from the romance of the remote artist-in-a-garret genius who has no need of pedagogical engagement, and allows us to focus on ways of thinking and doing that are *observable and replicable* processes and practices within *daily economic and social life.* Always and inevitably complex, creativity becomes less mystical, and once rendered less mystical it can be engaged intentionally as an outcome of pedagogical work. Put another way, we do not have to wait for the field to be more coherent and self-disciplined to get on with teaching for creative outcomes.

Why creativity now?

All this definitional work has been mobilised, at least to some extent, by a shift in understanding about where creativity is most likely to be happening. It is now generally understood in academic circles that the creative arts do not have a monopoly as locations of creativity. According to the Australian Research Council's Centre of Excellence for Creative Industries and Innovation[1], the creative workforce is no longer limited to the cultural industries, although they include many widely recognised cultural activities (Cunningham, 2006). Richard Florida (2002) has estimated that nearly one third of the future workforce will soon be identifiable as the creative workforce because the nature of their work will be to turn symbolic knowledge into economic and social assets. Notwithstanding criticisms of Florida's scholarship as echoing "lifestyle guides, entrepreneurial manuals and pop sociologies of the new-economy era" (Peck, 2005: 741), there is compelling evidence that we are seeing a radical departure from 'Information Age' work in which the routine accessing of information to solve routine problems has been core business to a "Conceptual Age" in which new cultural forms and modes of consumption will pull the arts in from an unheralded and untainted space outside enterprise.

Two trends are emerging for the arts in the new "Conceptual Age" (Pink, 2005). First, the arts no longer define 'real' creativity; and second, the arts are taking a new place *within enterprise*, with creative artists being employed for the first time by companies like Unilever UK to build a work culture that is able to learn the demanding range of "high concept/high touch" abilities necessary to a fast-moving business enterprise (Pink, 2005). With this sector predicted to be worth 6.1 trillion dollars in 15 years time, according to Daniel Pink (2005), it is little wonder that so many employers are

[1] http://wiki.cci.edu.au/confluence/display/NMP/CCI%27s+Creative+Industries+Definition

re-thinking the sorts of capacities they should be expecting from, and inculcating in, their workforce.

The importance of developing a more creative workforce is now a familiar catch-cry in public and social policy (Smith-Bingham, 2006; Seltzer and Bentley 1999; Leadbeater 1999; Landry 2000; Florida, 2002), and is evidenced in a growing body of scholarship about creative work in digitally enhanced environments (Cunningham 2006, 2002; Hartley 2004; Howkins 2001; Caves 2000). It is also a theme of post-millennial research about the future of employment (eg, Buchanan et al 2001; Kearns 2001; Bullen, Robb & Kenway 2004; ACER 2005). In broad terms, the message is that many of our current undergraduate students will be working in digitally enhanced environments where there will be few transportable templates for project design and implementation. University graduates, as potential future 'creatives' (Cunningham, 2006, Florida, 2002, Pink 2006), will be performing work that is less focused on routine problem-solving and more focused on creative outcomes that involve new social relationships, novel challenges and the synthesising of 'big picture' scenarios.

Our graduates will not only be working in unprecedented ways, but they will be doing the work at a speed that is unprecedented in terms of the Product-Innovation-Diffusion-Stasis cycle of economic production. The fact that this cycle has shrunk from a period of over 50 years in the 1970s to a period of less than 4 years in 2007 (Byron, 2007), means that all enterprise associated with global production is now faster and less certain, demanding more tolerance of ambiguity, risk-taking, and capacity devoted to experiment, variety and adaptation on the run (Weisberg, 1999). Furthermore, the fact that the time taken for a new idea or product to reach 50 million people has shrunk from 30 years (radio) to 13 years (television) to 4 years (Web) (Byron, 2007), means that digitally enhanced work environments (including universities) are now able to offer workers a startling number of opportunities for engaging in novel, synthesising activity on a daily basis. In Peck's (2005) terms, we are now seeing a "fast policy market" in which the "demand for creative fixes" (p.767) is speeded up, for better and worse, as urban planners and developers vie with each other for competitive advantage.

The advent of the speeded up, plugged in, template-free workplace puts paid to the idea that only a small number of workers will ever need to be 'creative'. It collapses the 'slicing and dicing' principle of creative endeavour, that is, that a worker will be employed for his or her 'natural bent' as *either* a Clarifier, *or* Ideator, *or* Developer, *or* Implementer – and that their role is simply to contribute this 'bit' of the production cycle to the larger whole. The creative team is more than the sum of its parts, a community of learners responding to 'now' design problems rather than working as a number of quirky-yet-brilliant individuals in a production chain. Indeed, the whole idea of being part of a 'chain' at all is outmoded. Public policy analyst Gregory Hearn (2005) points to "an emerging fundamental shift in the way that value creation is thought about in business" (p.1), that is, the shift from end-users as consumers to co-creators of value, and the related shift from value chain to network. Networks can 'go round' or elude a point of exchange where supply chains do not. In other words, we are now seeing more patterns of distribution and consumption in which consumers add value or finalise and so value-add to the product. In Lawrence Lessig's (2005) terms, the *user* becomes the *producer*. Once the workplace-as-creative-network replaces the workplace as supply chain, then workers are engaged in a very different workplace culture, one that is less vertical, more flexible and more team-based.

Yet despite all this press for change to workplace practice, the barriers to creative enterprise are very much in evidence, both within organisational environments and the learning environments that feed into them. The lack of a sense of challenge, excessive zeal and or stress, cult-ish solutions generated by self-help gurus, the inability to tolerate ambiguity, fear of making mistakes, limited space for experimentation and play– all these phenomena are readily identifiable as 'normal' features of educational and commercial life (Byron, 2007). This timidity around experimentation has been linked by Anthony Giddens, Ulrich Beck and others to a larger political and moral climate of "risk society" (Beck, 1992) which has shifted focus from the management and distribution of material/industrial 'goods' to the management and distribution of 'bads', ie, the control of knowledge about danger, about what might go wrong and about the systems needed to guard against such a possibility. While a risk minimising workplace culture does not kill off creativity - creativity can be useful in finding ways of minimising risk - it certainly is not a climate in which a variety of forms of creativity will flourish.

Higher education for a creative workforce

Higher education has, according to Anna Craft (2006), a "dynamic relationship with the… shifting world" (p.20) of enterprise in all its complexity. It shares with other post-millennial organisations the simultaneous pull to creativity and push away from risk and uncertainty. This push and pull remains unresolved in organisational leadership and management, creating a gap between the leaderly rhetoric of risk-taking and the managerial reality of bean-counting. However, as Paul Tosey (2006) makes clear, it is not a matter of organisational leadership and management making a choice for bureaucracy *or* for creativity, but enacting the complexity of working at the margin of certainty and uncertainty, understanding the risk (too much compliance, too much chaos) that bedevils each domain. After moving closer to understand this contestation within higher education institutions in all their complexity, Tosey concludes that there is more evidence of creativity being used "to converge and control" (p.35) than to engage productively "at the edge of order" (Fullan, cited in Tosey, p.34). If universities were to seek higher yield possibilities rather than using creative ideas simply to achieve stasis, there would need to be a much higher preparedness to tolerate failure - even embrace it – and this would be an indicator that conditions are ripe for creative emergence.

This is a real sticking point for the *performative* university. The post-welfare political reality is that every public organisation must render their quality and productivity calculable in order to make a case that their institution is worth funding. Post-millennial university managers, despite knowing that scientific solutions depend on the instructive complications of hundreds of failed experiments, not from 'eureka' moments in bathtubs or laboratories, are unlikely to be sanguine about embracing opportunities for 'error'.

The cost of this in terms of both morale and learning can be great. Carol Dweck's (1999) distinction between *performance goals* and *learning goals* demonstrates the down-side of a risk-averse educational culture. For Dweck, performance goals are "about winning positive judgment of your competence and avoiding negative ones", while learning goals are characterised by a desire to acquire "new skills, master new

tasks or understand new things" (p.15). While these two goals are "normal and universal", they are often in conflict. Dweck (1999) notes that, when there is an overemphasis on performance goals, people are less likely to risk moving out of their zones of competence, and more likely to blame their own innate ability if things go wrong. They are more likely to worry too much about their ability and not enough about strategy. When the pressure is on, if they can't look smart, nothing matters more than avoiding looking dumb, and this can consume a great deal of time and energy, while at the same time creating a downward spiral of self-recrimination, vulnerability and victim-hood (Dweck, pp.16-19).

There is mounting evidence to suggest that many universities are suffering from the condition of 'too much performance and too little learning'. Marilyn Strathern (1997; 2000) is one of a number of scholars who see the "audit explosion" in universities as impacting negatively on spaces for experiment, indecision and ambiguity. Strathern explains that audit works as a defence against systemic arbitrariness, applying mechanisms designed to ensure organizational precision for coping with social imprecision. The logic here, as Strathern understands it, is that systems of management need to be uniform because individuals are not, nor are likely to be. The logic of the intensive bureaucratic monitoring that characterizes audit culture is *not* 'one-size-fits-all' in terms of the individuals who are its 'products'. What is standard is the particular model for measuring organizational performance. In valuing standardised outcomes over strategic ways of learning something new, this model does not 'see' learning in any other terms but performance.

'Performance-over-learning' is a condition that has wider implications than its negative impact on people and morale. According to Csikszentmihalyi (2006), societies that cannot reach for knowledge beyond their own traditions, communities that cannot tolerate working at the interface of disciplines, educators who reduce creativity to a "facile routine of exercises in 'thinking outside the box'" (p.xix) – all militate against harnessing energy and imagination for the purpose of "build[ing]…products, ideas, and connections that add value to life" (p.xix). Yet the performative university, with all its contradictions, is a condition of our times, not a problem to be solved. Our pedagogical work must be conducted within this set of rationalities. We will continue to bemoan the "high standard of standardness" (Mulcahy, in Brenneis, Shore and Wright, 2003, p.7) to which we are hailed as performative academics. At the same time, any strong claim we might want to make about the significance of our teaching for the professional futures of our graduates needs to be validated in terms of demonstrated improvements in the learning outcomes of our graduates. How to proceed to incorporate creative possibilities among these learning outcomes is the subject of the section that follows.

Towards 'teaching' creativity

A significant issue in capacity building for creative work is the ability to work optimally in digitally enhanced environments where there are few blueprints for project design and management (Bauman, 2004). But the pedagogical implications are much wider and more profound than the adoption and adaptation of new digital technologies for teaching. Certainly computer-centred network technologies and their capabilities have impacted powerfully on social systems and social relationships. It is also true that the resultant "prosthetic culture" (Lury, 1997) of social engagement has

radically extended the social environments in which learning takes place. However, these impacts *may or may not* result in a new or improved set of creative social and commercial dynamics and capacities. As Sassen (2004) points out, digital technologies cannot be depended on to produce new dynamics – they may well be simply derivative or reproduce existing social relations. It is *pedagogical opportunity*, rather than technology, that is the driver of enhanced and different learning outcomes.

The challenge for universities seeking to equip undergraduates to enter the creative workforce is to promote and support a culture of teaching and learning that parallels an unpredictable and irregular social and commercial world in which supply and demand is neither linear nor stable, and labour is shaped by complex patterns of anticipations, time and space. Cultural theorists have suggested that this requires a pedagogical approach based on "the interplay of learning and de-learning" (Bauman, 2004, p. 22). Neuroscience likewise is advocating an urgent need to eschew explanation through instruction and replace it with a more experimental and error-welcoming mode of pedagogical engagement (Zull, 2004). This is not the reiteration of an oft-repeated call to a more student-centred approach. Rather, it signals a fundamental shift towards a more complex and experimental pedagogical setting. Put more simply, the challenge is to shift from sage-on-the-stage and/or guide-on-the-side to "meddler-in-the-middle" (McWilliam, 2005). It means, according to Hearn (2005), inviting students to become "prod-*users*" of disciplinary and interdisciplinary knowledge, rather than passive recipients of the knowledge of academics.

Pedagogical processes that build "prod-user" capacity are not predicated on the logic of a supply or value chain in which fixed knowledge is passed down from the top to the bottom. Instead, teachers and students act as co-creators of information products, drawing on a network of people and ideas that is fluid and organic. The pedagogical work, then, consists of *mutual involvement of teacher and student in assembling and disassembling* cultural products designed to inform, entertain, subvert, problem-solve and investigate. If creativity is more likely to be an outcome of adaptation, as Leadbeater (2000) argues, then graduates who are seeking to join the creative workforce will need the capacity *to edit* reality – to organise it and re-organise it by mixing form and content, to juxtapose through display, to compare texts to understand their difference (Lessig, 2005). In terms of assessment products, this is a far cry from re-hashing disciplinary knowledge through essays or tick-box tests. Evaluating student work, by implication, will mean setting up regimes of assessment that engage with processes of cultural production ie, the student's ability to cut and paste words, images, sounds, artefacts and ideas in new and meaningful ways – to store, apply and then discard them when no longer useful. It will also demand a more nuanced judgment of the quality of those abilities and their outcomes than currently exists in mainstream assessment practices. Thus it is the capacity to engage in value-adding assembling and disassembling processes - not the ability to regurgitate content knowledge - that needs to be prioritised in any authentic regime of assessment for creative capacity building. This capacity is likely to be optimally displayed, if Csikszentmihalyi (1999) is right, in groups and cohorts of students working in conjunction with each other and with staff, rather than in any individual student response to an assessment task.

Generation gaps matter

We know that some young people leave their formal schooling with a greater capacity than others to think and do this sort of re-combining and repurposing work. Put another way, they are more capable *editors* of reality than previous generations. Their editorial capacities may be understood as domain relevant skills that produce actions with potential social and economic value (Byron, 2007). Collectively they *take play seriously*, a key disposition in creative cultural production.

The 'gamer' generation, according to recent research by John Beck and Mitchell Wade (2006), is much more likely than their baby boomer predecessors to understand and engage in serious play, and much less likely to be interested in any pedagogical process that has at its core the transmission of knowledge from elders. According to Beck and Wade, gamers have "systematically different ways of working … systematically different skills to learn, and different ways to learn them" (p.2) Thus they need to learn how to use meta-maps or how to operate without one (p. xvi), given that games are "literally under their control from the very beginning" (p.11). They have already learned through gaming that "trial and error is almost always the best plan" (p.12), so according to Beck and Wade, "often you 'teach' better by introducing a group of gamers to a problem and then just getting out of the way" (p.xv). This message strongly resonates with Zull's (2004) contention that long-winded content delivery of narrowly defined disciplinary content are as detrimental to learning as experimental modes of pedagogical engagement are helpful to it. Simply put, 'explain less, welcome error' are the two blunt messages coming from social researchers *and* from cognitive scientists.

What also distinguishes this generation is the extent to which strong bonds exist "with people who share your game experience not your national or cultural background" (p.14). The idea that gamers behave, in essence, as social isolates is, according Beck and Wade (2006), a myth that incites moral panic in baby boomers. What Beck and Wade found in gamers is a stronger desire than in the baby boomer generation to engage in team based activity, and some very different take on traditional concepts of value, progress, and other fundamentals of the business world (p.19). These differences in preferred modes of social engagement and in ways of understanding the world do matter in terms of the pedagogies that are likely to 'tell' in universities.

Creative cultures and university pedagogy?

Experimental pedagogies (including recent prod-*user* adaptations) have always existed in university settings, but they have generally been confined to laboratories and studios. There is much less evidence of experiment in faculties that prepare mainstream professionals (eg, education, law, accounting), although there is some evidence of its uptake in such interdisciplinary domains as human services, construction, biotechnology and business management. As trans-disciplinary becomes more compelling and better understood in terms of what it offers the 'big' issues of sustainability, global poverty and so on, we may hope for some further evidence, not of the watering down of disciplinary expertise, but powerful specialist knowledge being pooled in the interests of social and economic betterment. This may, in turn, provide opportunities for re-assessing traditional forms of teaching and the contexts in which they are most useful.

If Gary Poole (2007) is right about the future of learning in higher education, and if others cited above are right about the increasingly social nature of creative capacities and practices, then we will see two issues changing the nature and purposes of what university teachers do. They are (a) the increasing press to acknowledge the *social* nature of learning and (b) the 'perceived usefulness' of creativity as a powerful motivator for learning. The fact that creativity is now understood to be enhanced through social processes (Csikszentmihalyi, 1999), and the fact that it is also now acknowledged as a key economic driver (Cunningham, 2006; Florida, 2002), means that we now have in universities the conditions of possibility for thinking and enacting a stronger relationship between pedagogy and creativity in the culture of university learning and teaching.

This stronger relationship is identifiable though not widespread, in some university settings. For example, participant communities are utilised as means by which to engage 'prod-user' capacity (eg, the Youth Internet Radio Network, (YIRN) in an Australian Research Council funded research project at the Centre for Creative Industries at the Queensland University of Technology (Burgess, Foth and Klaebe (2006) and in the Bachelor of Popular Music program at the Queensland Conservatorium of Music (Lebler, 2006). In such learning environments, young people are enabled not just to assemble and disassemble cultural products, but to engage in the process of their evaluation in terms of 'perceived usefulness'. This means developing capacity for more rigorous self-assessment, including the capacity to incorporate feedback from enthusiastic but unsentimental peers. The key shift here is movement away from a cultural model in which an individual teacher defines the limits of curriculum and assessment for individual learners, but it is not a move to chaos or to serendipity. What characterises such learning environments is the expansion of the involvement of colleagues and students in decision-making about the overall pedagogic culture and the practices that support that culture.

We have yet to bring together the fragmented examples of such pedagogical cultures into a coherent and well theorised set of examples of replicable and sustainable principles and practices. In my view, we should not wait until more work is done to bring "order, focus and convergence" in the conceptual field (Greene, 2001: 3). The field is robust enough to allow us to develop some quite precise, resilient and enduring pedagogical applications. This possibility comes with all the risks that are involved in moving from a pedagogy of instruction focused on 'filling up' individual students with disciplinary content, to pedagogies that engage communities of learners in messy social processes for 'prod-using' ideas and objects that may or may not add value to themselves or others.

There is risk in holding on and risk in letting go. And there is additional risk in insisting that we can and should know exactly when and how to count creativity as a singular graduate attribute. Nevertheless, we now know so much about the usefulness of creativity to mainstream enterprise and social futures that we cannot not address the pedagogical demands of creative capacity building with and for our students. While it may not be possible - nor indeed desirable - to render all aspects of student creativity calculable as individual learning outcomes, it is certainly time to move 'creative' from rhetorical flourish to pedagogical imperative.

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