Promoting Creativity in Learning and Teaching

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Abstract

This paper considers creativity in teaching and learning within the higher education (HE) context. HE teachers and learners need to gain confidence to be more creative and experimental and we suggest self-efficacy and locus of control might be instrumental in this. When HE teachers are confident to be creative, students are also likely to be more engaged and actively experiment in creativity. Collectively, we can foster a culture for creativity, based on an informed rationale about good learning in HE.

Introduction

> *There is no doubt that creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns.* (de Bono, 1993: 63)

In this paper we consider the notion of creativity for enhancing teaching and the support of learning. We suggest that creativity could offer an invigorating, albeit challenging, experience for both the learners as well as for the teacher. But we are aware of the perception among many teachers and students being creative and experimental is not without risk (eg Edmondson, 2002, Cropley, 2001). Creating challenges or experimental activities in learning and teaching, particularly with emerging learning technologies, are regarded as steps into treacherous waters.

HE teachers are under pressure (eg Biggs & Tang, 2011 Gibbs, 2010) to provide the best possible assured experiences to learners that are consistent and stable. Teachers are also aware of judgments of their modules and courses in a myriad of assurance mechanisms: in internal quality assurance processes as well as in external judgments. But in contrast, highly creative teachers do push at the boundaries they feel are set around them and are resistant to compliance (Fryer, 2006).

Equally learners feel pressured (Coats, 2000) to be compliant and act strategically in playing the 'academic game': aware of the importance and pressure to conform in order to succeed on their assessments and performance, or worse still aspiring only to survive the course. They are averse to being found to be 'wrong' but also with increasingly strident expectations of their teachers' role to provide a learning space and experiences that will enable them to succeed.

Teachers also often resist creativity because it proffers change (Jackson *et al,* 2006). Change may be regarded by busy teachers (and senior managers) as costly in time and effort, unpredictable in outcome and often likely to encounter organisational constraints (Boyce, 2003). The sheer complexity around creativity is seen as outfacing and overly challenging. Furthermore the teacher's own creativity and creative processes are rarely publicly welcomed, supported or even acknowledged by HEIs, let alone celebrated (except perhaps by their own students). These prevailing conditions in the UK HE context have been seen to be stifling and antithetical to creativity as active experimentation and inquiry. Indeed it is argued we have been educating creativity *out* of people (Robinson, 2006).

Yet we also know creative capacity is a valued attribute for forward-looking, twenty-first century learners and graduates, assisting them to be ready to take (considered) risks, able to tackle complex problems and to come up with creative solutions. There is a compelling case for HE to provide activities and spaces in which learners face difficult challenges, where they need to come up with collaborative and creative solutions, within environments providing opportunities to be experimental to explore those 'what if …?' situations. We need agile knowledge workers fit for the complexities of change as manifest across contemporary society.

We need a strong and compelling argument to overcome the risk aversion in steps away from safety and conformity towards experimentation, curiosity and creativity. We offer that self-efficacy and a high level of internal locus of control is likely to influence the approach of both teachers and learners to creativity. We also suggest the design of learning spaces and activities framed by a sound pedagogic rationale for 'good learning' could be helpful in promoting creativity.

What do we mean by creativity and why is it so important in learning?

Creativity has been defined by Sir Ken Robinson as original ideas that have value (Robinson, 2011). Kleiman (2008) similarly suggests creativity involves originality and novelty combined with utility or value., while Jackson offers creativity as the ability to 'move an idea from one state to another' (Jackson, 2006:8). Creative capacity is seen as a rich human characteristic. Creativity has been linked with: attitudes of curiosity; willingness to engage and explore; being proactive; being willing to take risks, having determination and even obsession. Jackson (2006) offers a set of characteristics for creativity, including in being: imaginative; original or inventive; able to adapt and improvise; curious and resourceful; and able to see things differently.

Robinson (2006) argues creativity is an essential aspect for learning, since learning takes us into a future that we cannot yet grasp. He argues there is a need to promote divergent thinking in diverse and dynamic learning spaces. We need educational spaces that acknowledge human diversity and that privilege and exploit such diversity to develop our creative capital.

The research of Craft (2000) is set outside HE, but usefully introduces an associated notion of 'possibility thinking' or 'refusing to be stumped by circumstances, but being imaginative in order to find a way around a problem' (p4). For her, possibility thinking is the driving machine of creativity. It centres on questioning and being curious. However, sometimes learners find it hard to externalise questions or even to admit they have questions. They are embarrassed to be wrong or admit to not (already) knowing. They avoid the necessary actions to find deeper answers in themselves or based on external sources. Possibility thinking influences our ability to find and solve problems and come up with original ideas. A possibility thinker is constantly looking to find new ways of thinking about the world.

McWilliam and Dawson (2008) contrast what they term first generation or big 'C' creativity with second generation or small 'c' creativity. Big C creativity is described as a complex set of behaviours and ideas exhibited by an individual and commonly associated rather exclusive connotations of genius, idiosyncracy or charisma. In suggesting an alternate movement toward small c creativity, they seek an unhooking of creativity solely from such associations.

McWilliam and Dawson view the shift to small c creativity as a democratising turn and process for coping with uncertainty and complexity to help solve complex problems. We

might term it a kind of everyday creativity perhaps? Creativity with a small c is used to refer to both the process and the products of collaborative and purposeful activity. Thus it is argued creativity can be team-based, observable and learnable. It is evidenced in a collective capacity to select, reshuffle, combine, or synthesise already existing facts, ideas and skills in original ways. Thus we could promote creative thinking, being and doing in HE learning spaces by focusing on creative, collaborative learning activities among both learners and teachers (and see also Livingston, 2010).

Csikszentmihalyi (2000) has also contributed the notion of 'flow' to suggest creative flow as a sense of optimal engagement in a task, that can be 'patterned but not chaotic' (McWilliam & Dawson, 2008). In a state of flow, the learner's emotions are positive and energised *and* fully aligned to the task at hand.

A range of learning dispositions or cognitive habits of creativity have been identified in people engaged in creative acts including: focusing on pattern recognition; the creation of mental models; finding analogies/metaphors to represent ideas; having the ability to cross domains; exploring alternatives; and having a fluency of thought (Jackson, 2006). We suggest this could be termed 'kaleidoscopic thinking' ie thinking made up of patterns and facets within an order – but an order that can shift, from which new creative patterns emerge but that always incorporate a reflective symmetry, ie so that we reflect and learn from the experience and develop our creative repertoire.

Linking creativity to self-efficacy and locus of control

We introduce self-efficacy and locus of control in connection to creativity. We do this from a belief of a mutuality and iterative relationship between creativity *and* self-efficacy and locus of control. A person's sense of self-efficacy can be said to influence their ability to cope with unexpected or challenging situations in creative ways. Bandura (1997) defined self-efficacy as the belief a person has about their ability to succeed in specific situations. Self-efficacy is influential in how a person approaches goals, tasks and challenges and can be seen to strongly influence the power a person actually has to face those goals, tasks or challenges competently.

People with high self-efficacy believe they can perform well, and are more likely to view difficult tasks, problems or challenges as things to be dealt with rather than things to be avoided. The creative capacity a person has, ie their creative capital, to act and respond in dynamic, problem-solving situations is therefore likely to be influenced by their sense of self-efficacy.

We know people generally avoid tasks where their sense of self-efficacy is low. Self-efficacy significantly lower than ability discourages growth and skill development. An optimum level of self-efficacy can be regarded to be slightly above ability where people are most encouraged to tackle challenging tasks and gain experience, to operate in a zone of proximal development (Vygotsky, 1978). Conversely, engaging in creative acts, being in the 'flow' is suggested as a means to promote self-efficacy: since creativity in personal terms has the potential to enhance the self (Morrison and Johnston, 2003).

A related concept is locus of control. Locus of control refers to the extent to which a person believes they have the ability to exercise control in their life. The 'locus' is either internal (the person believes they can control their life) or external (meaning they believe that their decisions and life are controlled by environmental factors which they cannot influence). Individuals with a high internal locus of control believe that events in their life derive

primarily from their own actions. A high internal locus of control will also shape a person's approach and attitude positively towards facing challenging and new situations, and being able to face those situations in creative ways.

Towards creative approaches in good HE teaching for the digital age

> *The best teaching helps students to question their preconceptions, and motivates them to learn by putting them in a situation where their existing model does not work – and in which it matter to them that it does not work and in which they come to see themselves as authors of answers, as agents with responsibility for change* (High Level Group, 2013: 18)

We need to identify ways in which to actively design for creativity as well as ways to identify creativity as an outcome of collaborative pedagogical activity. We need to think about the translation of high-level ideals of creative capability into pedagogical principles and strategies including by the removal of hardwiring in HE eg in discipline boundaries, and where individuals are valued over teams. We also need to be aware creativity has rarely been an explicit objective of learning in HE (save perhaps in art and design courses) because it has been regarded as difficult to assess objectively.

McWilliam and Dawson (2008) introduce a set of paradoxes: designed to inform the high level design of replicable pedagogical environments infused with apparently contradictory imperatives but creating a rich climate to foster and evoke creative outcomes and not dissimilar to conceptions of communities of practice (eg Wenger, White & Smith, 2009) as environments for situated learning. We have interpreted the McWilliam and Dawson paradoxes briefly as:

- *Connectivity with diversity* – an environment where learners are connected within a local community but with awareness of a larger world of potential team members sharing cognate interests.
- *Co-invention/co-creation with separation* – an environment in which the rules of self-management and self-regulation are understood but one in which authentic and synergistic learning, is promoted (see also Gauntlett, 2011).
- *Leading and following* –an environment where team members share collective responsibility for leadership (McWilliam & Dawson: 13).
- *Enhancing constraints and removal of inhibitors* – an environment that minimises control while providing scaffolded opportunities to enable team members to optimise their own and team performances.
- *Explaining less and welcoming error* – an environment with flattened control, recognising errors will be made but utlising them as learning opportunities.

We can introduce a creative ethos to all kinds of environments for learning – ie not only in classrooms and lecture theatres through reshaping and reconfiguring opportunities for divergent thinking, creative problem-solving, collaborative tasks and active student participation in curriculum design and assessments. We can also promote creativity in innovative uses of online learning spaces such as eg in webinars, on discussion boards, or simulations as well as using mobile technologies and social media.

We further propose the use of metaphor as a specific creative means to challenge logic, to introduce expanding imagery, and to encourage learners to a new awareness.

> *Metaphor systematically disorganises the common sense of things – jumbling together the abstract with the concrete, the physical with the psychological, the like with the*

unlike – and reorganises it into uncommon combinations. (Geary, 2012: 2)

Principles of 'good learning' provide a firm pedagogical footing for designing learning spaces for creativity (see Ellis & Goodyear, 2010). Good learning is active, involving the learner in 'doing' as a cognitive activity (Biggs & Tang, 2007). Good learning is goal-oriented, there is a purpose and direction, understood by the learner. Good learning is individual, experienced by the learner alone (though they can benefit greatly from sharing with, and hearing from others). It is self-regulated, by the learner's own understanding of their learning and reflection. It is cumulative in that a learner builds on the knowledge they have, especially drawn from previous learning and experiences. It is also situated, benefitting from awareness of and connection to an authentic context of use and from the affordances of technological resources.

We have drawn together a high level pedagogical framework in Figure 1 (see below) for replicable creative learning spaces derived from the principles for good learning and connectivity, but also informed by appropriate 'kinds of learning' drawn especially from the work of Laurillard (2012). Laurillard's five kinds of learning are encapsulated as learning: by acquisition; discussion; inquiry; collaboration; and by practice.

In creative learning spaces, we focus on learning through discussion, inquiry, collaboration and/or practice and much less on learning by acquisition, to emphasise learning for understanding not content mastery. We also focus on experience-rich processes as in Laurillard's learning by practice (and Gauntlett's (2011) focus on 'learning by making' might equally be considered here). We see these spaces as opportunities for independence and autonomy, involving choice and negotiation eg learning by collaboration. Creative learning spaces or learning ecologies (Jackson, 2006) are expansive spaces connecting learners-learners, to tutors as well as to resources. Learning in expansive spaces is likely to focus on activity (as making and doing) in novel and challenging situations and problem-solving tasks eg as in inquiry based learning. Such spaces need to enable opportunities to take risks without penalty or detriment (from not succeeding) eg in learning by practice and by discussion around formative tasks and feedback opportunities. They need to be rich in chances for formative conversations as in learning by collaboration promoting opportunities for learners to reflect and evaluate themselves and with peers.

We can be mindful of principles of good learning and kinds of learning to underpin the design of tasks and activities when we develop creative learning spaces. For example, we design tasks for learners that build on previous learning, but that engage them actively in authentic collaborative tasks to promote the sharing of perspectives in resolving problems and creating novel solutions together.

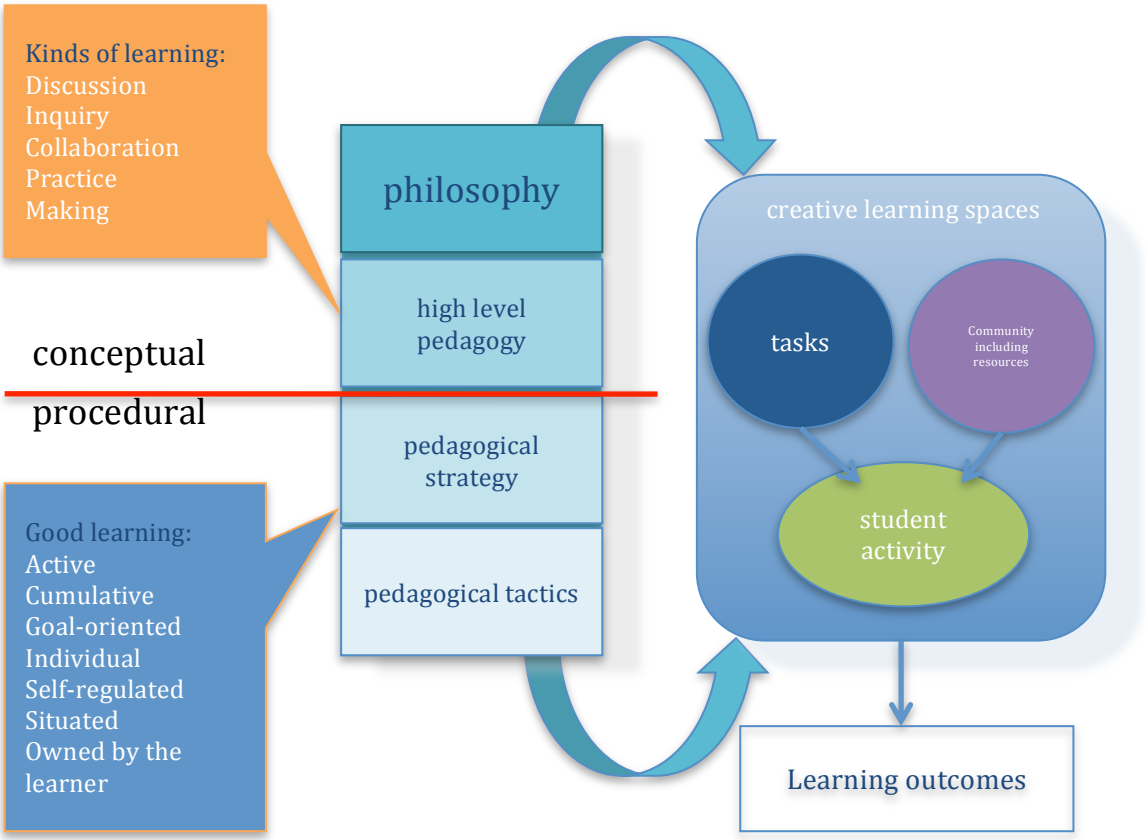

Figure 1: Towards a pedagogical framework for creative learning spaces or environments (adapted from Steeples, Jones & Goodyear, 2002)

We can also exercise a creative approach in the deployment of learning technologies and media-rich resources such as in the use of mobile technologies, video and mixed media. We can model as well as promote creativity by using media-rich formats as novel ways of representing ideas and divergent thinking eg: in video and in the use of visual metaphors; in novel ways of adopting specific alternative roles/perspectives as in online role plays (Smith & Nerantzi, 2012); in mixed reality games (eg Nerantzi, 2013) in which there can be a blurring and merging of real and virtual worlds to produce new learning spaces and visualisations, where physical and digital objects co-exist and interact in real time.

Examples of creativity in HE teaching and learning

1. Mobile phone film-making project

Keegan and Bell (2011) built upon Kleiman's (2008) conceptual framework in the context of an authentic and creative OER (Open Educational Resource) media creation project, by applying the experiential orientations of the framework to student perceptions of creativity. The project involved mobile phone film-making by students as user-generated content (UGC) and open media production. The mobile phone, by its very nature as a pervasive, accessible, unobtrusive recording medium was found to lend itself to creativity through chance encounters.

The project necessitated the students to develop innovative approaches to overcome the constraints of the medium. They were encouraged to think about user-generated content in different ways and develop an appreciation of the potential of mobile devices as creative tools. The intention was to develop students' appreciation for participatory media production and to think 'outside the box', by developing skills in the production process and thinking

editorially, as opposed to a more traditional narrative-based approach to film-making. The short-form video was found to be easy for learners to produce on a mobile phone and suited to viewing and sharing between mobile devices and across the web. 'Mistakes' such as pixellation and shakiness were viewed as characteristics of the medium. The projects set for the students were in the spirit of the 'good enough' movement that combines a new aesthetic with the experience of creating digital media, where the importance of the content (subject matter) and its context of use overrules low production values. Mobile phone films were found to offer an authenticity in content, with the potential to lead to a heightened sense of verisimilitude. Media constraints and disorientation were viewed as discontinuities in the learning process with the potential to transform learners through creative disruption, that in turn facilitated deep learning and reflection, while providing greater opportunities for creativity in their practice.

2. Online role plays

Smith & Nerantzi (2012) used online role-play webinars with academic staff participating in a Postgraduate Certificate in Academic Practice at the University of Salford, UK. The role plays ran in 2011 (with permission to use role play resources from the HEA/NUS Student Engagement project) and using Blackboard Collaborate to run the webinars. The study explored conceptions of student engagement in relation to time-bound and online activities. Participants were allocated to roles holding widely varying conceptions of student engagement. The participants were asked to engage in a discussion and collectively make a decision within a set time-frame. At the end of the role play activity, participants discussed the experience and their immediate reflections on the online role-play.

The potential pedagogical benefits perceived for using online role plays included opportunities for peer interaction, and promoting collaborative learning in meeting new, different and alternative perspectives in the role-play. The study looked for a perturbation of viewpoints among the participants from acting in the role play, and its potential in leading to an inner realignment of viewpoints. It was attempting to see if the role play could act as a creative, bounded activity for engaging and motivating participation, as part of a rich media approach to learning by discussion and collaboration.

The participants suggested role play online had aided them to temporarily disengage from their own views in adopting an alternative role. The findings also suggested the importance of all contributing, of them becoming engaged and shaping the narrative. Participants had been found to be experimenting creatively with alternative identities and beliefs in what they regarded as a safe and supportive environment. It was also found that small groups were best, more richly interactive and purposeful in this kind of online time-bounded activity.

3. Mixed reality games or simulations

Kirkley, Kirkley & Jamie (2005) describe mixed reality as an integration of real world components with digital media, played out in both physical and virtual spaces using digital technologies. Bonk & Graham (2006) also suggest the combination of established and emerging technologies provides an unprecedented opportunity to create blended learning environments that are highly interactive, meaningful and learner-centred.

The mixed reality game "Sell your bargains" was used successfully at the University of Salford and specifically on a Learning and Teaching in Higher Education (LTHE) module (Nerantzi, 2013). It has been played with about 150 participants in six cross-disciplinary cohorts and has been refined and evolved over this period of time. The game provides an

opportunity to learn about creative teaching and learning through immersive collaborative play and stretches over one week. Problem-Based Learning is interwoven with game-based learning. Games enable us to be less conscious and express our curiosity more openly (eg Brown, 2010, Whitton, 2010) which can lead to creative discoveries.

The game has three parts. In part 1 of the game, participants are asked to identify a challenging threshold concept to introduce to their own students in a forthcoming teaching session. Their scenario becomes the authentic PBL trigger, which is shared via a social media portfolio and used in part 2 of the game. In part 2 participants from different disciplines pair-up to find an object or a series of objects they could use to help their students grasp the identified challenging concept. Participants need to be quick, resourceful and work together with their partner to come up with an innovative idea. When the group comes back together, the pairs share their learning and teaching interventions and reflect on this experience. Presentations are recorded and shared on YouTube. Peers vote for the most innovative idea and the pair with the most votes is the winner. In part 3 participants capture their intervention in their e-portfolios, part of the summative assessment on the module. Through teaching observations the tutor has also the opportunity to experience the application of the intervention in practice.

Evidence suggests (Nerantzi, 2013) the vast majority of participants enjoy playing this game and find it beneficial for their practice. They value the opportunity to participate in a creative game-based learning activity. They especially find it useful to explore a variety of less-traditional learning and teaching spaces, to collaborate with colleagues from other disciplines, to problem-solve together, and to gain a better understanding about how to use their own smart devices for learning and teaching. Participants equally value the opportunity to experiment in a safe and supported environment that authentically helps them to deepen their understanding of more creative learning and teaching approaches and related pedagogies.

Conclusion

Truly creative learning spaces are ones in which learners and teachers are mutually engaged in diverse thinking, critiquing each other's viewpoints and working on problems collaboratively. We conceive of creativity as an evolution in which new ideas emerge through the reconsideration of existing ideas. Creativity comes from synthesis, making new combinations of existing ideas. It can exist in the introduction of brand new ideas but it can also come from re-application, where pre-existing ideas are reviewed and seen in a new light.

Cole, Sugioka and Yamagata-Lynch (1999) suggest environments that encourage independence, risk-taking and intrinsic motivation have been found most conducive to creativity. Teachers need to accept, model and encourage creative thinking including tolerating dissent, in encouraging students to trust their own judgements, take risks and challenge assumptions. Teachers need to emphasise creativity and assist learners to realise and have a strong sense of self-efficacy. Teachers need to design learning spaces that serve as a stimulus for creative thinking eg for brainstorming and modelling.

> *The best teaching and learning environments encourage students to develop confidence in their own creative abilities …* High Level Group (2013: 13)

We wish to investigate further the notion of creative thinking for learning as 'kaleidoscopic thinking' where learners and tutors gain confidence from a high internal locus of control and a positive sense of self-efficacy to collaboratively share ideas, looking for patterns and facets

from which new creative patterns emerge and that incorporate a symmetry for reflection on learning.

In this paper, we have emphasised creative learning spaces are ones in which learners and teachers are likely to be less apprehensive about creative expression and sharing ideas with others. There is likely respect for unusual questions, imaginative ideas, creating an ethos in which ideas have value. We also propose creative learning spaces be founded on a participatory culture, an acceptance of imperfection and the sharing of authentic experiences and ideas as a valued, highly social process. Such spaces we believe, warrant further exploration.

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