



Creativity in Higher Education

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The **Imaginative Curriculum Network**¹ is a community of interest with over 200 members. Its goals are:

- To develop knowledge and understanding about creativity in higher education.
- To provide practical advice and support to teachers who want to develop their curricula and teach in ways that are more likely to foster students' creativity.

And with support from the Higher Education Academy and National Endowment for Science, Technology and the Arts (NESTA):

- To raise awareness of the importance of creativity in higher education learning and students' experiences of higher education.

Why creativity is important in higher education

- 1 Being creative is a fundamentally human characteristic. People generally feel more fulfilled and motivated if they are able to be creative. If education is about helping people to develop their full potential then helping students to understand and develop their unique creativities is a worthwhile educational goal. Enabling students to be creative should be part of a higher education experience.
- 2 Creativity is integral to being an historian, biologist, lawyer, engineer or any other disciplinary field of endeavour. But being creative means different things in these different contexts.

Robert Sternberg² (an eminent researcher in the field of creativity and intelligence) argues that we need three different sorts of abilities to be successful: **analytical abilities** - to analyse, evaluate, judge, compare and contrast; **practical abilities** - to apply, utilise, implement and activate, and **creative abilities** - to imagine, explore, synthesise, connect, discover, invent and adapt. Successful people do not necessarily have strengths in all areas, but they find ways to exploit whatever pattern of abilities they may have *in any given situation or context*. Is this a useful conception of abilities for higher education?

- 3 Beyond higher education people need to be creative in order to survive and prosper in a complex, ever-changing unpredictable world. We need to harness our imaginations and creativity to work with, adapt to and exploit the complexity and change that is all around us in whatever context we work.

Creativity for a complex world

The world gets ever more complex: in the words of Ron Barnett, 'higher education is faced with not just preparing students for a complex world, it is faced with preparing students for a supercomplex world' (Barnett, 2000). More recently, Barnett and Coat (2005 p25) question

¹ <http://www.heacademy.ac.uk/853.htm> or <http://www.imaginativecurriculum.net>

² Robert Sternberg <http://www.yale.edu/pace/teammembers/personalpages/bob.html>

whether the current emphasis on skills and measurable outcomes in higher education are really developing students in ways that will enable them to engage fully with this complex ever-changing world. *'But the modern world may be such as to require human qualities and dispositions that are not easily caught in a language of skills and outcomes. Admittedly, human qualities and dispositions are intractable and not necessarily amenable to straightforward assessment. Yet there may be qualities that are both especially beneficial in a changing and complex world and that higher education can be adept at developing and, with the appropriate attention and effort, could be more adept still.'* The Higher Education Academy's Imaginative Curriculum project³ believes that *we need to harness our imaginations and creativity* to work with, adapt to and exploit the complexity in which we are continually immersed.

Being creative in disciplines

Barnett and Coat suggest that a curriculum that will prepare students for this type of world needs to engage them not only in knowing and acting upon knowing but also *in being*. The Imaginative Curriculum project believes that integral to being an historian, biologist, lawyer, engineer or a practitioner in other disciplinary fields of endeavour. But being creative means different things in these different contexts. In sympathy with Barnett and Coat, we are trying to encourage disciplinary communities to consider the important contribution that creativity makes to thinking and being in their disciplinary field. In this way we might gradually come to recognise that creativity is an important part of our individual and collective identities and value the particularities of creativity in different disciplinary fields.

Teacher conceptions of creativity

Research undertaken within the Imaginative Curriculum project shows that if you ask any group of academics *'what does being creative mean to you?'*, you will get a set of responses that embrace the following ideas:

- originality and individuality.
- being imaginative, generating new ideas, thinking out of the boxes we normally inhabit, looking beyond the obvious, seeing the world in different ways.
- producing new things.
- doing things no one has done before.
- doing things that have been done before but differently.
- experimenting and taking risks.
- working at the boundaries of their field.

At this level there is general agreement as to what being creative means.

We all create our own meanings and understandings of creativity based on our individual experiences and values and the contexts in which we live and work. Creativity cannot be understood without an appreciation of the contexts and cultures in which it is constructed. When we contextualise abstract notions of creativity in the world of a higher education teacher, through a question like *'what does being creative mean when you design a course?'* teachers begin to give meaning to their own creativity in the contexts in which they work (McGoldrick 2002 and Oliver 2002):

- ❑ creativity as personal innovation – something that is new to individuals. This is often about the transfer and adaptation of ideas from one context to another;
- ❑ creativity as working at and across the boundaries of acceptability in specific contexts: it involves taking risks;

- ❑ creativity as designs that promote the holistic idea of graduateness –the capacity to connect and do things with what has been learnt and to utilise this knowledge to learn in other situations;
- ❑ creativity as making sense out of complexity i.e. working with multiple often conflicting factors, pressures, interests and constraints;
- ❑ creativity as a process of narrative- making in order to present the 'real curriculum' in ways that conform to the regulatory expectations of how a curriculum should be framed.

A key message coming through personal accounts of creativity produced by higher education teachers is the extent to which individuals feel that their creativity is enabled or disabled in the organisational settings and cultures within which they work, an important lesson when we consider how we might design courses and teach in ways that help students to be creative.

Creativity in students' learning

According to Biggs (1999, 2002), creativity involves the extended abstract outcomes of learning like – hypothesising, synthesising, reflecting, generating ideas, applying the known to 'far domains', and working with problems that do not have unique solutions. Creativity also involves the capacity to generate and connect ideas and create frameworks to judge the worth of ideas and potential solutions. Many academics would see these as higher order academic skills and capabilities that they seek to develop in their disciplines. The Imaginative Curriculum project is beginning to explore with academic communities what creativity means in their disciplinary context (see below).

Creative performance also requires positive attitudes and high levels of motivation (passion) evidenced by persistence and willingness to work hard. Such attitudes derive from personal beliefs that obstacles can be overcome. So, learning processes to foster creativity must develop self-efficacy, encourage risk taking in safe environments and help students to engage with messy/complex and unpredictable situations where there are no right and wrong answers.

While different disciplines recognise and value different forms of creativity, research studies recognise a range of intellectual attributes, attitudes and behaviours associated with creativity. DeWulf and Baillie (1999 p14-15) identify three characteristics.

- ❑ **ability to visualise ideas** – holistically, spatially, metaphorically and to be able to transform ideas through imaginative manipulation (complements reasoning, McKim, 1980). Flexibility, fluency and adaptability are important to the transformation of ideas.
- ❑ **effective use of memory** – for previously learnt knowledge and the ability to make connections and associations with and through this knowledge.
- ❑ **convergent and divergent ways of thinking** – academic ways of thinking tend to value convergent ways of thinking - logic, reasoning, analysis, objectivity, judgement (left brain thinking - McKim, 1980). Divergent thinking brings into play the right brain thinking which is associated with openness, subjectivity, feeling, intuition, emotion, sensory and imaginative processes (McKim, 1980). Convergent thinking focuses on one answer while divergent thinking produces alternative possibilities and solutions. Creativity involves both convergent thinking (focused, analytical, judgmental and detailed) and divergent thinking (diffuse, free flowing, associated, perceptual and imaginative). Training in creative thinking techniques such as those described by DeWulf and Baillie (1999) and Baillie (2004) can help foster the habit of thinking in both divergent and convergent modes.

Creating the conditions for creativity

Teachers recognise that they are responsible for creating the conditions which can either encourage or discourage students from being creative. Colleagues in CELT (Aldred et al 2004) have identified several conditions that appear to facilitate students' creativity.

- Having sufficient time and space in the curriculum to allow students to develop their own creativity.
- Having sufficiently varied and diverse working situations to enable all students to be creative.
- Allowing students the freedom to work in new and interesting ways.
- Challenging students with real, demanding and exciting work.
- Designing assessment which allows for outcomes which are not narrowly predetermined.
- Fostering a departmental climate which encourages reflection and personal development for both staff and students.
- Continuing academic debate within the discipline, and dialogue with the various stakeholders, about the nature of the subject and the role of creativity within it.

Teaching for creativity

The concept of teaching is critical to any consideration of the promotion of students' creativity. Negative views of the idea that creativity can be taught are based on transmission models of teaching where teachers attempt to transfer their own knowledge and sense making to students through lecture dominated teaching, where students' engagements in learning are predominantly based on information transfer and are heavily prescribed and controlled by the teacher, and where summative assessment drives the learning process. Such conditions are less likely to foster students' creativity than when a teacher acts as a stimulator, facilitator, resource provider, guide or coach, and where students are given the space and freedom to make decisions about their own learning process and outcomes.

An analysis (Jackson 2004) of 28 accounts of teaching that was deliberately trying to encourage students to be creative in a range of disciplinary contexts revealed the things that higher education teachers do to promote students' creativity. They:

- give students permission to be creative
- encourage them and value their efforts to be creative
- provide time for students to be creative
- provide safe spaces where they can try new things out
- give students the confidence to take risks
- develop students' self-confidence to work in unpredictable situations
- promote the development of self-awareness and reflective learning
- provide situations for learning where there are no right answers
- provide real-world learning situations
- provide activities that are meaningful to participants
- provide learning situations that are both fun and challenging
- demonstrate their own creativity: provide a role model
- are prepared to take risks themselves
- are prepared to reveal something of themselves in the teaching process
- act as guides and facilitators
- adopt a questioning approach to learning
- create opportunities for problem or enquiry based approaches to learning
- provide opportunities for collaborative working and discussion
- are sensitive to the balance between challenge and reinforcement
- are sensitive to the balance between freedom and control

- are responsive to students as a group and as individuals and adapt their teaching as new possibilities emerge

To summarise, teaching for creativity requires a pedagogic stance that is facilitative, enabling, responsive, open to possibilities, and collaborative, and which values process as much as outcomes. Teachers operate in strong cultural and procedural environments that have significant impact on what they can do as teachers to promote students' creativity. In spite of, or perhaps because of, these constraints, teachers who care about creativity are able to overcome these barriers to create through their pedagogy curricular spaces and opportunities for learning that encourage and reward students for their creativity.

Designing a curriculum to promote creativity

DeWulf and Baillie (1999) offer a definition of creativity as 'shared imaginations'. It involves firstly having your own imagination, then doing something useful with it (sharing it) and perhaps encouraging others to use their own imaginations (the process of sparking each other!). The idea of shared imaginations is an attractive conception for the curriculum context as teachers' programme and module designs provide the vehicle for sharing their imaginations. However, the real act of creativity for most teachers is in making a rudimentary design (module specification) come alive through the sorts of teaching processes and interactions described above.

Any programme can be designed or redesigned to make it more favourable to nurturing creativity and developing the habits of thinking creatively (Knight 2002). The following points (adapted and developed from Knight 2002 and Jackson 2002b) provide some guiding principles for helping teachers to develop their capacity to help students learn more creatively and to design a curriculum that nurtures creativity.

Teacher conceptions of teaching and learning: We are enabled or stopped from doing things by the conceptions and perceptions (imagination!) we hold. Conceptions and perceptions that support creativity in students' learning view teaching as a learning process itself and the role of the teacher is to engage students actively in challenging learning processes and help them create their own processes and frameworks for working with 'problems'. Teaching to strategies must foster students intrinsic motivations for learning that derive more from the pleasure of interesting challenges than from the threat of assessment. Teacher conceptions must also value the idea that we can learn through systematic reflection in order to optimise the potential for learning from any situation – even those that don't go the way they are expected. John Biggs identifies 3 levels of thinking about teaching in terms of what is focused upon (Biggs 1999, chapter 4). At level 1 the focus is on *what the student is*, at level 2 the focus is on *what the teacher does* and at level 3 the focus is on *what the student does*. Teachers' who are likely to be most sympathetic to fostering creativity in students' learning are likely to be thinking in ways that are consistent with the second and third levels – what do I need to do to promote this type of learning and what do students need to do to learn this way? Houghton (2002) added a fourth level called '*how the student manages what the student does*', initially within frameworks created by the teacher, but ultimately negotiating or creating his/her own framework. This conception supports habits of self-regulated learning (Zimmerman 2000) and improved self-awareness of *what it means to be* an historian, chemist or engineer. An expanded commitment to nurturing creativity will only occur if teacher perceptions of teaching and learning embrace these higher order and increasingly sophisticated conceptions.

Sharing understandings and conceptions: Designing a curriculum to support creativity in students' learning works best when teaching teams develop a shared understanding of the different meanings of creativity for the particular learning contexts. In reaching an understanding it is helpful to examine what teachers understand by creativity. Subject benchmarking statements rarely mention creativity so there is plenty of scope for discussion within disciplinary communities.

Developing the knowledge and skills of teachers: Helping students to be creative requires particular facilitation skills and the adoption of a collaborative pedagogic model. Building the knowledge and capacity for this type of teaching is an essential step in the development process. Growing knowledge that will help teachers, and those who develop teaching, to be more knowledgeable about the ways in which creativity in student learning can be nurtured, is the central concern of the Imaginative Curriculum project.

Mapping what already exists: Most programmes will contain within them opportunities for students to work in creative ways. Making these opportunities explicit and understanding the nature of the creative processes within these opportunities is a necessary first step in designing for creativity. When the mapping is completed additional ways and strategies in which creativity might be fostered can be considered (see below).

Progression to independence: Nurturing creativity requires teachers to respect the goals, motivations for learning and decision making processes of learners. This way of thinking is consistent with the idea of enabling learners to become autonomous and self-regulating. A well designed curriculum will prepare students for learning creatively, equip them with a range of tools and encourage them to use and adapt these tools and work towards independence. Zimmerman's (2000) notion of self-regulated learning provides a good theoretical model on which to develop teacher conceptions and practice.

Openness to choice and negotiation: Teachers introduce the tools — concepts, strategies, information sources — and then have students practise them on problems and situations that they choose/identify. This requires teachers to be flexible and adaptable in their approach and to facilitate students' decision making. These characteristics of learning are also consistent with Zimmerman's model for self-regulated learning.

Novel tasks: Students' learning is facilitated through tasks that promote divergent thinking and require them to draw from their learning in several modules and allow a variety of acceptable/appropriate/valid responses. Teachers might find themselves considering the plausibility of the solutions and then awarding marks on the basis of students' accounts of their problem-working strategies. (NB. It is not a good idea to automatically join the phrase 'problem-solving' with 'creativity'. The first is often convergent, the other employs both divergent and convergent thinking. Creative thinking techniques which promote both divergent and convergent thinking can be used to bridge the gap, Baillie (in press)).

Developing students' knowledge about creative learning processes: If students understand the 'rules of the game' and why the programme is as it is, then they are better placed to reflect and enter into the spirit of the creativity game. The development of skills in creative thinking are particularly important in enabling students to think freshly and differently about their problem working situations (De Wulf and Baillie 1999, Baillie 2004).

An emphasis on learning: Learning for understanding rather than learning for extensive content mastery. There is evidence that an emphasis on coverage encourages superficiality. Superficiality is not conducive to creativity. Understanding, which comes from covering less ground with more emphasis on the underlying concepts, strategies and assumptions, is conducive to creativity. Put it another way: cover less material but in ways that help students to understand more about the domain and its complex learning outcomes and their own engagement with the learning process. They might also approach problem working using creative thinking techniques which encourage divergent rather than convergent ways of thinking.

Knowledge and capability/learning transfer: Being able to use knowledge, skill and behaviours developed in one context in another context is an important ingredient for creativity (Gardner 1993). The ways of thinking outlined above are important in the transfer of knowledge as well as

the generation of knowledge. Encouraging learning that involves such behaviours is more likely to be achieved in situations that are experienced as novel and unpredictable to learners. This is what people encounter in real life and they can be simulated in the HE curriculum.

Personal accounts of learning to promote reflection and further learning: The capacity to record, describe and evidence learning and the process of learning are central to metacognition. They encourage learners to recognise their own learning as it emerges and to make claims to understanding and achievement. There is a clear relationship with this aspect of creativity and personal development planning and other self-regulating behaviours (Jackson 2002a).

Openness to innovation and change: Possibilities for change need to be designed into the module from the beginning so that teachers and students can respond to what emerges from the process.

Assessment: The current assessment model with its atomised approach to assessing learning at module/curriculum unit level is a major inhibitor of designs for creative learning which may need to foster development over a longer period of time and a range of contexts before assessing capability. Synoptic assessments that enable students to draw together and apply their learning throughout a course (such as final level projects and dissertations) provide important opportunities for students to demonstrate their creativity. Strategies that require students to reveal their understanding of how they have acquired core learning outcomes from a course (e.g. through reflective report or portfolio) offer another way of demonstrating their creativity.

Student instrumentalism, driven by the teacher's belief that students only learn when they are assessed, inhibits creativity. Narrow, summatively-driven assessment practices and criteria that focus on what is known, which do not recognise the process of learning and how people come to know, or recognise emergent unanticipated learning outcomes, inhibit creativity.

Processes that foster creativity

Many of the characteristics of designs that prompt students' creativity are those found in learning strategies that are process-based i.e. in which the process of learning is as important as the results of learning. Our emerging notion of an imaginative curriculum that nurtures and enhances students' creativity is one that is rich in the experiences of learning. Such learning environments are process-rich rather than being overloaded with content. They move away from teacher directed classroom situations and embrace more facilitated and collaborative models of teaching and learning. They work towards enabling students to be self-directing, self-regulating and resourceful learners. They give them space to learn through the experience and processes of learning. To achieve this condition students have to be properly prepared and supported. They need to acquire the habits and behaviours and self-awareness of self-regulated learners (Zimmerman 2000). Self-regulated learning involves self-determined processes and associated beliefs that initiate change and sustain learning in different contexts. It is fundamentally linked to:

- metacognitive processes such as planning, organising, self-instructing, self-monitoring and self-evaluating one's efforts to learn;
- behavioural processes such as selecting, structuring, and creating environments for learning;
- processes and beliefs that motivate self-regulated people to learn – such as beliefs about their own capabilities to learn, beliefs that the outcomes of learning will be worthwhile, intrinsic interest in the task and satisfaction or dissatisfaction with their own efforts to learn.

Personal development planning (PDP) is underpinned by the model of self-regulated learning (Jackson 2003b) and it is possible that this scientific theory of learning can be extended to other forms of process-based learning.

There are a rich variety of learning processes and curriculum designs that provide experiences of learning in novel and emergent situations including – problem-based, enquiry-led, work-based, context-based, collaborative learning, game-play, role-play and simulations and enterprise (Boyle and Smith 2002, Ellington 2002, 2004; Newman 2004, O'Rourke and Kahn 2004, Kneale 2004). There are also lots of opportunities for experiential learning outside the academic curriculum, for example through work experience, work placements, study abroad and learning in the community. Again PDP can be used as a tool for supporting, recognising and valuing this type of learning.

Students' responses to teaching which promotes their creativity

An analysis of 28 personal accounts of teaching aimed at promoting students' creativity (Jackson 2004) shows that, as in any teaching strategy, results vary according to group dynamics, the personalities, capabilities attitudes and interests of individuals and the actions of the teacher. The diversity of students' responses sometimes makes it difficult to generalise at the group level. Students' responses also vary within the process with the same student responding well and not so well to different parts of a process. Some students are more comfortable than others with unconventional ways of thinking and doing. Students often respond well and with enthusiasm to creative challenges investing significant time and energy in the enterprise. Some student groups may begin a process warily, or even be resistant to it but attitudes tend to become more positive as they engage with the challenge. Some teachers recognise that what they do has a strong influence on the way their students engage: a perspective that emerges from running the same session with different groups of students and doing slightly different things and observing and reflecting on the consequences of their different actions. Through engagement with creative processes and the idea of creativity some students change their perceptions of creativity. In many of the accounts there is a sense of pleasure as teachers admit to being unsure about how students would respond then being pleasantly surprised as responses emerge. A significant number of accounts highlight the pleasure, fun and enjoyment that participants gained through their creative process. What is implicit in the accounts is the sensitive, trusting and responsive teacher-student relationships necessary to facilitate, continually respond to and adapt to what emerges from the process.

Imaginative Curriculum project

If anything I have said resonates with you then you might want to participate in the activities of the Imaginative Curriculum Network. Newsletters describing the activities of the Network can be found at <http://www.heacademy.ac.uk/imaginativecurriculum.htm>

The Network is connected by an email list imaginative-curriculum@jisc.ac.uk to help people communicate with each other and share their ideas and practices. There are over 200 people registered on this list.

The Network has produced a number of curriculum guides for different forms of process-based learning which can be downloaded from <http://www.heacademy.ac.uk/1646.htm> or <http://www.imaginativecurriculum.net>.

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