

Designing for Creativity: A Curriculum Guide

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Introduction

Enabling students to be creative is a worthwhile and desirable goal for higher education and any programme can be vivified to make it more favourable to fostering creativity. This Guide provides ideas to help HE teachers create their own curricular designs to foster creativity. The Guide is published as a working document which means that we will continue to shape it in response to user feedback. If you have comments or suggestions for improvement please forward them to norman.jackson@ltsn.ac.uk.

What is creativity?

Creativity involves first imagining something (to cause to come into existence) and then doing something with this imagination (creating something that is new and useful to you). It's a very personal act and it gives you a sense of satisfaction and achievement when you've done it.

Creativity is difficult to define and it is rarely articulated as an explicit learning objective in the academic curriculum. In contrast, many top companies train their graduate employees in creative ways of thinking in order to sustain innovation and remain competitive.

Every HE teacher will interpret the idea of creativity in his / her own way. The views of HE teachers interviewed by McGoldrick (2002) included:

- ❑ newness - novelty or originality for an individual or group of individuals;
- ❑ excitement - its stimulating because it is different;

Purpose

This is one of a series of guides produced by the Imaginative Curriculum Network to stimulate thinking and promote good practice in curriculum design. This Guide focuses on the idea of creativity and how a higher education curriculum might be designed to help students find and enjoy their own creative sparks. It is informed by a small number of commissioned research studies aimed at understanding how academics view creativity and draws on the wider scholarly and research literature.

Audience

This Guide is written primarily for:

- ❑ people who have institutional responsibility for leading developments in teaching and learning;
- ❑ people who lead whole course curriculum design and/or who help other academics to develop the curriculum;
- ❑ people who help other academics to develop their knowledge and skills about curriculum design e.g. Tutors for PG Cert HE teaching and learning courses;
- ❑ LTSN Subject Centres who are growing disciplinary knowledge of practice.

There is a companion guide for Busy Academics.

Why should HE teachers be interested in creativity?

We live in a complicated and messy world in which work for most of our graduates is a continuous stream of 'problems' that have no simple or unique solutions. Being able to work creatively will help your students survive and thrive in this world and help them lead more satisfying and meaningful lives.

The LTSN Generic Centre has sponsored re-publication of a booklet *How to Foster Creativity* written by Simon DeWulf and Caroline Baillie.

- useful - it works, at least at present;
- pleasurable -aesthetic satisfaction;
- moral - an essence of creativity is that its results are 'constructive';
- hard work -what you get out reflects what you put in.

A research study of creativity in school teaching Fryer (1995 p10) shows that the conceptions held by HE teachers are similar to those held by school teachers e.g.

'Creativity is being original, being able to take an idea forward and develop it in your own way.'

'Creativity is the ability to look at things in different ways, to find satisfaction in making or creating something and persevering with it until the end product. It involves hard work...'

Knight (2002) suggested that we can view creativity as a habit of thinking freshly within a domain. This view emphasises:

- understanding and mastery within a domain;
- divergent thinking (in contrast with more convergent habits);
- transfer of learning within a domain and between domains.

Creativity and curriculum design

Being creative is, for the most part, a subconscious act. HE teachers do not sit down to design a course and think I'm going to be creative now! But they do recognise, in the design process, thinking and behaviours that they believe are creative (see the research studies of McGoldrick 2002; Tait 2002 and Oliver 2002).

Creativity is about having and using your imagination and perhaps helping

others to use their imaginations!

DeWulf and Baillie (1999) offer a definition of creativity as 'shared imaginations.' This is an attractive definition for the curriculum context as designs then provide the vehicle for sharing the imaginations of the designers and provide prompts for creative action by the teachers who deliver the curriculum. The latter interpret and reconstruct the design intention in their own imaginations and then animate the designs through their teaching and wider support for students' learning. The interpretation and conversion of the design through the teaching process is another important creative act (Tait, 2002).

At the level of programme the designs have to communicate meanings to many teachers and students. At the level of curriculum units the designer and teacher may be the same person.

Some ways in which creativity is recognised by academics designing a curriculum include:

- personal innovation as a creative act - innovation is not something that is universally recognised as being new but something that is new to individuals, it is 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 gradueness - 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 will be framed (Oliver 2002).

From the above the idea of creativity in teaching might be manifested both in the process of design (e.g. trying new things that have a good chance of working) and in the process of interpreting and animating a design to optimise the potential for learning.

Furthermore, if the expression of academic creativity is the holistic ability to use the knowledge and skills gained through a higher education to develop new knowledge, then designs for creativity are about fostering a holistic and connected rather than atomised approach to learning.

Academics feel that there are certain conditions that stimulate creativity in the design process (McGoldrick, 2002) namely:

- existing knowledge of the discipline;
- enthusiasm for the discipline;
- an interest for students and their learning and
- a problem or issue.

Academics also associate a number of factors with creativity namely:

- ability to make connections and linkages between the formerly unconnected
- intuition - *that little imaginative spark.*

There are strong similarities between the perceptions of academics of their own creativity and what they perceive are the characteristics of creativity in students' learning.

Creativity in students' learning

'Typically, the creative [staff and students], had developed sufficient knowledge to make connections, was sufficiently confident to think outside well trodden paths and to fail and to try again, was self-critical and flexible and highly motivated' (McGoldrick, 2002).

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 thinking** - academic ways of thinking tend to value convergent ways of thinking - logic, reasoning, analysis, objectivity, judgement (right brain thinking - McKim, 1980). Divergent thinking brings in to play the right hand brain 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, judgemental and detailed thinking) and divergent thinking (diffuse, free flowing, associated, perceptual and imaginative).

Creativity involves the extended abstract (EA) outcomes of learning (Biggs, 1999; 2002) like hypothesising, reflecting, generating ideas, applying the known to 'far' domains,' working with problems that do not have unique solutions *'EA outcomes are not just indicators of fluency or the products of brainstorming for any old outcomes, the whackier the better....they show the Torrance feature of flexibility, i.e. the categories have been shifted. The outcome adds value to the information given. At the highest academic levels creativity would be manifested by moving beyond the framework given, a paradigm shift, and that is where originality comes in'* (John Biggs, imaginative curriculum network discussion July 2002).

The criteria of product characteristics within which notions of creativity are accepted or rejected apply differently according to the discipline. For instance, hypothesising is a generative process but there are good and bad hypotheses and in science there are rules and procedure for testing to see what are good and what are bad ones. A characteristic of academic creativity is the capacity to evaluate any ideas or products that are created through generative processes. The capacity to evaluate and create evaluative frameworks to judge the value of ideas is therefore an essential feature of academic creativity.

Attitudes and behaviours

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-confidence and self-esteem, encourage risk taking in safe environments and help students to be 'comfortable' in messy/complex and unpredictable situations where there are no right and wrong answers. Working with complexity in a self-sustained and determined way is a fact of life and helping students to use their intellectual abilities in complex learning processes is a worthwhile enterprise for higher education. Fostering creativity is a way of showing students that self-motivation is valued.

Creative thinking processes and student learning

In any aspect of teaching it is useful to have a theory of learning in mind to help create the conditions that will facilitate student learning. The theory developed below (by Gelb, 1993) is one of several similar process-based models for creative thinking and behaviour. This is offered as a heuristic prompt for thinking about creative learning processes rather than an analytical planning tool. It might be a useful model for introducing the idea of creative thinking to students but a desirable learning outcome from a curriculum that has been designed to promote creative thinking, is that students are more aware of their own creative processes. *Your own knowledge of how you learn is more important than someone else's theory of how you learn.*

DeWulf and Baillie (1999 and 2002) provide a very readable practical guide to creativity for HE teachers. They summarise (pg 17) a number of creative process models which are very similar in their conception. The process model adopted here (and in Figure 3) is that of Gelb (1996) which recognises five overlapping stages in the creative process - preparation, generation, incubation, evaluation and implementation.

Given that this is iterative and reflective one might expect that there will also be a further evaluation stage to check that the results of the creative process actually worked. Or perhaps more realistically creativity is sustained through the implementation process as actions are adjusted in real time as unanticipated consequences emerge.

Preparation : In this initial stage the situation is absorbed and problems are defined, reformulated and redefined. The process moves thinking from a position of little or no specific knowledge to one of general comprehension of what needs to be known. The way questions/problems/situations are formulated significantly influences the subsequent learning pathways. This is a situation that most teachers and students will recognise in their everyday experiences. We all employ a range of strategies for engaging with a problem but we need to acquire a certain amount of knowledge and understanding before we can make sense of it and work with it intelligently, imaginatively and productively. *Helping students to recognise how they acquire new knowledge to work with new problems or situations is important in designs for this type of learning.*

Generation: This stage involves creating lots of ideas about the problem/issue/situation/work theme. The process may be intuitive and ad hoc or systematic. A variety of techniques and strategies have been developed to facilitate the generative process. Brainstorming and capturing spontaneous or associated ideas is a good example. But there are many other techniques and the LTSN UK Centre for Materials Sciences is developing (through 2002-03) a toolkit of creativity techniques and providing opportunities for practitioners to develop the skills of facilitation. *Designs for creative learning should encourage students to use a variety of techniques and tools to support the generation of ideas.*

Incubation: After a period of immersion in a problem, people often generate good ideas, potential solutions, or perhaps have a clearer insight into the way forward. Such experiences typically occur after a period of 'relaxed attention' (e.g. after sleeping on the problem). When the object of creative thought is not necessarily uppermost in the mind. This state of mind seems to allow sub-intentional intelligences to engage with the area of interest and help create the conditions that encourage solutions and responses to emerge. It should however be noted that while we can all point to incubation-type experiences it does not always happen and students may not experience it within a particular learning situation. *Designs for creative learning should encourage students to be aware of such subconscious processes.*

Evaluation of ideas: After ideas have been generated they are reviewed, analysed, clustered and evaluated. The generation of frameworks, reference points and criteria for the appraisal of

ideas, options and possible solutions is integral to the creative process. *Designs to encourage creative thinking need to help students use and develop for themselves frameworks and criteria to help them evaluate their ideas.* In work contexts we often test ideas with colleagues or peers. So within student learning contexts peer group discussion in the merits of ideas and the criteria that might be used to judge them are important.

Implementation: The evaluation leads to plans to convert the most valuable ideas for the particular circumstances into actions that are then implemented. This moves us from creative thinking into the domain of innovation where ideas are turned into products, processes or performance. The actioning of ideas generated and evaluated through creative thinking processes provides further opportunities for creativity as intentions are adjusted in response to results. Ultimately It is only by realising ideas in this way that we know whether they will work as we imagined. *Designs for creative student learning should incorporate opportunities for students to turn their ideas into things or other outcomes.* In real life good ideas often do not work out exactly as we intend and we have to adapt and change as unforeseen problems or situations emerge. Such experiences provide rich opportunities for learning and designs for learning can help maximise learning if students are able to reflect on their experiences while they are doing it (reflection in action).

Evaluation of results / products - towards the end of any creative learning process a teacher may encourage students to stand back and examine the whole process, the results and what they learned through the experience. Being creative is to some extent a state

of mind and being aware of how you have done it is important personal knowledge for doing it again in a different context. *Designs for creative student learning should encourage students to reflect on their overall experience and results and ask questions like: did your idea work out as you intended? What happened and what did you learn through the process? Where would you take the idea next?*

Designing for creative learning

Being creative involves complex learning in the sense that it is not about learning something determinate and that unlike more controlled learning the outcomes may not be predicted in advance. We can create conditions under which complex learning is more likely to happen and we can make general predictions about it amongst groups of students. However, we can neither plan for or measure complex learning in the ways that we treat less complex learning (Knight, 2002).

A curriculum that promotes complex learning involves mastery of four categories of aptitudes and behaviours (Knight 2002 quoting De Corte 2000 p253):

- a well organised and accessible domain specific knowledge base;
- heuristic strategies for problem analysis and transformation^a;
- metacognitive knowledge and self-regulating skills;
- positive beliefs, attitudes and emotions.

^a in the context of creative learning heuristic strategies are concerned with generating and evaluating ideas and possible solutions to problems or learning situations created by teachers.

This conception of complex learning is similar to that proposed by Amabile (1996) for creative learning and performance namely,

- domain specific knowledge and skill (you have to know about engineering before you can be a creative engineer);
- creativity-relevant skills (you have to know how to go about being creative);
- creativity-relevant processes (you have the opportunity to be creative);
- task motivation (you have to be self-motivated to be creative)
- personal autonomy (you have to be free to think or determine a course of action).

We can relate these abstract conditions to the real world of curriculum design through McGoldrick's (2002) study of academic's views of creativity in the curriculum design process. She identified four factors that contributed to creativity and innovation, which she termed the *creative quartet*.

'There was some consensus that the bedrock of any curriculum creativity which [academics] had achieved consisted of four main elements: existing knowledge; enthusiasm for the discipline; an interest in students and their learning; and 'an issue'. The knowledge to make linkages between the formerly unconnected was a prerequisite of innovation, so was enthusiasm for the discipline, but without the other two features of the quartet, curriculum innovation was unlikely to happen.' This shows the importance of both intrinsic motivations (passion, and enthusiasm for the subject and students' learning) and extrinsic (an issue) motivations.

These conceptions of complex learning (based on a scientific knowledge of learning), together with our own research of how academics think about creativity, provide us with a framework for designing a curriculum to stimulate and support creative learning. Such designs will:

- draw upon relevant domain specific knowledge which will reflect disciplinary or interdisciplinary contexts in which students are immersed;
- develop students' awareness and knowledge of their own creativity and the cognitive skills that are of particular significance in creativity;
- provide ideas, problems and situations that result in rich experiences and opportunities for being creative;

But designs will be meaningless unless teachers can create the conditions that engage students fully, fire their imaginations and motivate them.

At the programme level

Designing for creativity involves thinking about the whole programme and the particular opportunities and contexts for learning within the programme (modules/units). It may also utilise students' wider experiences outside the academic curriculum. Any programme can be vivified to make it more favourable to fostering creativity. The following points (adapted and developed from Knight, 2002) provide some guiding principles for designing a curriculum that fosters creativity.

Shared understandings

Designing a curriculum to support creativity in student learning works best when HE teachers 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 themselves understand by creativity.

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:

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.

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 want to foster development over a longer period of time and a range of contexts before assessing capability. Student instrumentalism driven by the extrinsic motivator of assessment inhibits attempts at promoting student creativity

At the module level

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.

Novel tasks. Students' learning is facilitated through tasks which promote divergent thinking and require them to draw from their learning in several modules and allow a variety of good 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 one is generally convergent, the other isn't.)

Differentiated assessment. Narrow, summatively-driven assessment practices which do not recognise emergent learning outcomes will smother creativity.

An emphasis on 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.

Knowledge and capability transfer (being able to use knowledge, skill, behaviours developed in one context in another) is an important ingredient for creativity (Gardner 1993). Encouraging learning that involves such behaviours is more likely to be achieved in situations

that are experienced as novel and unpredictable to learners.

Students who are knowledgeable 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. Students who do not know the rules are likely to try much harder to bargain it into familiar and safe shapes (Doyle, 1983).

Personal accounts of learning or portfolios describing and evidencing learning and the process of learning are central to metacognition. They encourage learners (one might include teachers also) to recognise their own learning as it emerges and to make claims to achievement — convergent and divergent — in their own ways. There is a clear relationship with this aspect of creativity and personal development planning (see PDP Curriculum Guide).

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

Sound evaluations. It has been implied that programmes that favour creativity are rigorous ones. Good programme evaluation practices, ones that go far beyond the standard module tick-list approaches, support rigorous academic practices.

Aids to help you design a curriculum for creativity

Appendix 1 attempts to map the dimensions of the teaching system (what teachers do), the learning system (what students do) at each of the typical stages of a creative learning

process. The image is intended to give a sense of direction and vision rather than a checklist of things to do.

Appendix 2 contains a set of questions and prompts to help you think about how you might design a curriculum to promote students creativity.

Appendix 3 taken from Knight (2002) provides a holistic framework for evaluating the tendencies in a curriculum to support creative learning enterprises.

Appendix 4 (from Tait, 2002) provides ideas and prompts for creating space within a curriculum for creative learning.

FEEDBACK

The network would be very interested in feedback on the value of this guide as a stimulator and we welcome additional or alternative perspectives and examples of creative teaching and learning. Please send comments to Norman.Jackson@ltsn.ac.uk.

Resources to support creative learning

Further reading

DeWulf and Baillie (1999 and 2002) provide a very readable account of creative processes. This booklet has been reproduced to support the imaginative curriculum project. If you would like to purchase a copy at cost £5, please request from gcenquiries@ltsn.ac.uk.

Workshops

LTSN will put on workshops from time to time on promoting creativity. If you are interested in such activities please check the LTSN events section www.ltsn.ac.uk/genericcentre/

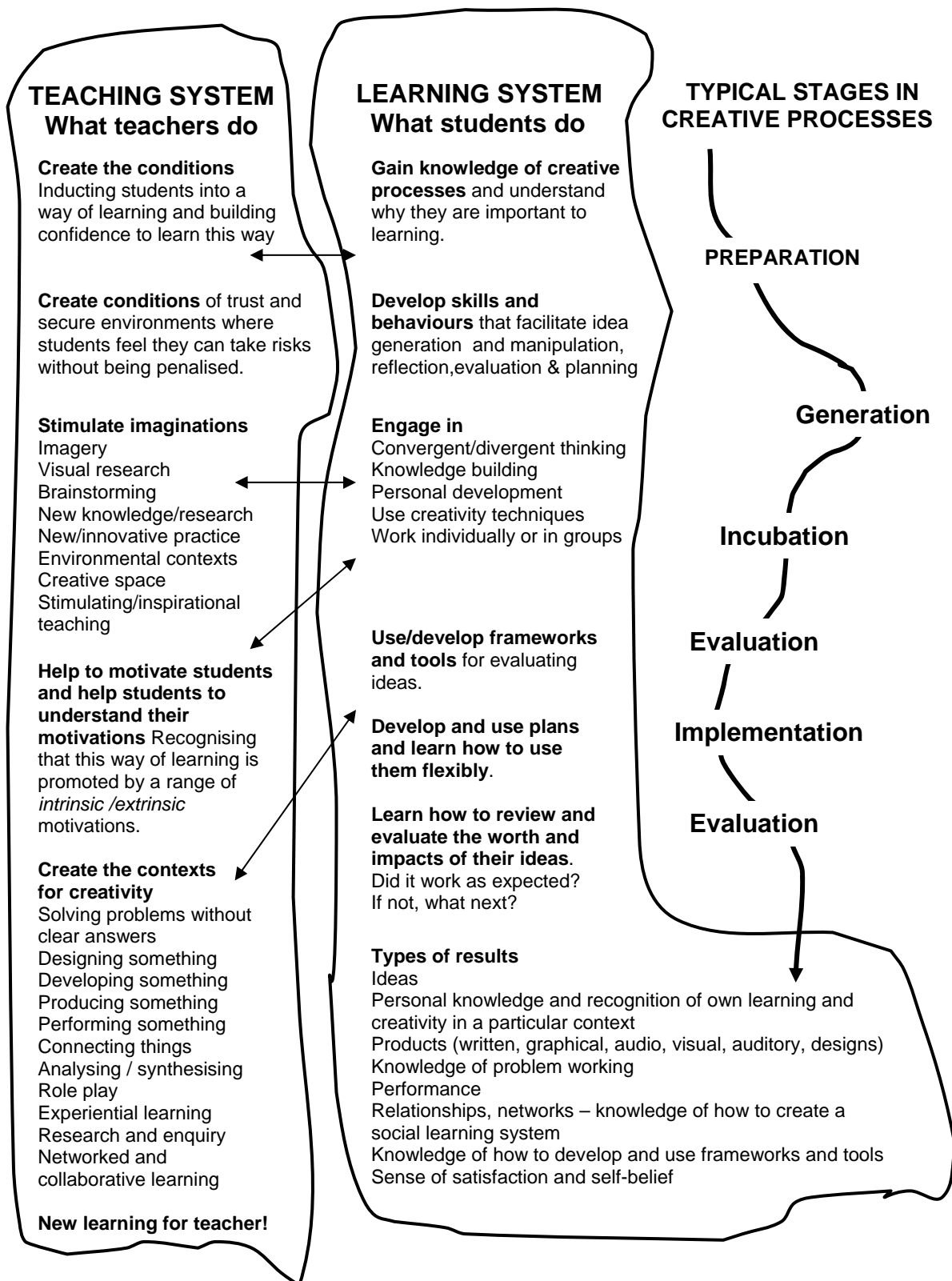
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Step 1

1 Personal understanding, motives and preparation

- What do you and your colleagues understand by creativity?
- How does your personal creativity manifest itself?
- Is creativity valued in your discipline? How is it valued?
- Is creativity implicitly or explicitly valued in your existing course?
- Why do you want to encourage creativity in your students?
- Background reading e.g.
 - Imaginative Curriculum Research Studies -what academics think of creativity
 - DeWulf and Baillie (2002) CASE Creativity in Art Science and Engineering.: 'How to Foster Creativity'. This can be purchased (£5) from the LTSN Generic Centre (gcenquiries@ltsn.ac.uk).
 - Examples of Practice (The LTSN web sites will be building knowledge of creative ways of teaching and learning).

Step 2

- 2 Do you want to begin by helping students' develop knowledge and self-awareness about their personal creativity and the idea of creative thinking (developmental approach) or do you want to grow this understanding retrospectively after they have engaged with a process (emergent approach with emphasis on learning through reflection).

Step 3

- 3 In what contexts/situations would you like students to work with the idea of creativity? Bearing in mind that the most stimulating environments for creative learning are likely to be:

- novel* (new or not familiar to students);
- challenging* (characteristics might include: newness; lively - much happening; involve interaction and collaboration; involve competition; involve pressure to work to tight schedules; involve lots of choice/many possible solutions and are unpredictable);
- encourage experimentation* and risk taking
- are rich in experiential learning*

- 4 What possibilities are there within your existing curricular experiences?
What new possibilities are there?

Rich curricular environments for creative learning include

- problem working exercises where there are no clear/unique answers
 - enquiry based learning exercises
 - designing something
 - producing something
 - performing something
 - assignments geared to gathering, connecting and synthesising information from many different sources
 - collaborative learning and production exercises (teamworking)
 - networking and network-based learning
 - project work
 - fieldwork
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- work placements
 - purpose designed exercises to give students a unique learning experience
 - use of reflective journals/logs

5 **Are there ways in which extra-curricular activities**, like part-time work contexts, voluntary work in the community, travel, study abroad, student representation work, which are all rich in experiential learning, can be used as contexts for creative learning?

6 **What examples can I draw upon for inspiration?**

Check web sites and other sources of information listed in references

7 **How do I evaluate and assess/reward learning?**

- Do you want to assess students? If yes, what are your motives?
- If this is about valuing intrinsic motives, will students engage in the process without being assessed?
- If you are going to assess, what is it that you want to assess and why?
 - The processes students create and their engagement with the process?
 - Their ability to comprehend their own creative thinking and processes?
 - What they learn through reflection in action or retrospectively?
 - The amount/quality of ideas they generate?
 - Their ability to evaluate ideas?
 - Their ability to turn their ideas into designs, products or other outcomes?
 - Their ability to collaborate and interact with others?
 - To what extent can students be involved in self-evaluation?
 - To what extent can they be involved in generating the criteria for evaluation of their performance?

Step 4

8 **How do I prepare/equip my students?**

- Introductory discussion
- Background reading
- Reflections on experiences - outside HE
- Learning from reflection

Step 5

9 **How do I facilitate learning?**

General behaviours and questioning

- That are positive, energetic and motivate student engagement
 - That stimulate / provoke discussion
 - That encourage sharing and exchange of ideas
 - That value all ideas and contributions
 - That encourage students to think of possibilities, extend their imaginations and take risks - entering territory that they don't normally inhabit
 - Questions that are ambiguous and open to interpretation
 - Questions that encourage students to draw on wider knowledge and experience as well as domain specific knowledge
 - Questions that require students to synthesis and connect seemingly disparate ideas and information
 - Questions and prompts that call for conceptualising problems and situations in different ways - that seek lots of ways of working with problems and situations and do not seek single solutions
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- Questions that require evaluations to develop and draw upon a wide range of criteria and considerations.

How do I stimulate ideas? (see Dewulf and Baillie 2002)

- Imagery
- Visual research
- Brainstorming
- New knowledge/research
- New/innovative practice
- Environmental contexts
- Role play
- Creative space
- Stimulating/inspirational teaching
- Real world and live case studies dealing with contemporary issues

How do I support idea generation? (see Dewulf and Baillie 2002)

Techniques include:

- Brainstorming
- Nominal group techniques
- Mind mapping
- Synectics
- Lateral thinking
- Analogical thinking
- Systems thinking

How do I support the evaluation of ideas?

Questions like:

- What constitutes a good idea (in context)?
- Is it an effective idea?
- Is it a simple idea?
- Is it compatible with the way the world/people work?
- Will it solve a particular problem?
- Does it create problems?
- Is the idea feasible?
- Is it economically viable?
- What changes will it require people/societies to make?

How do I provide opportunities for students to turn their ideas into real things, processes, performance or other outcomes?

How do I encourage students to reflect on their overall experience and results?

Questions like:

- Did your idea work out in the way you thought it would?
 - What happened and what did you learn through the process?
 - In view of what you have learnt, would you do it again in the same way?
 - Where would you take the idea next?
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Appendix 3 Framework for evaluating the overall tendencies in a curriculum to support creative learning enterprises (based on Knight, 2002).

Tending to favour novelty/creativity	Tending to favour reproduction
1. The learning environment favours the development of a sense of place — of the creation of a community of learning and teaching practice.	Students pass through an educational topography but they are more like tourists than parts of the places they visit.
2. Students repeatedly brought face-to-face with the rules of this game — they become 'knowing students'	Students apply the rules of academic games in which they have succeeded in the past to their first cycle studies
3. Teachers see the first cycle of higher education learning as an introduction to what it is like to think and be like a member of the disciplinary community — like a historian, engineer etc.	Teacher specialisation and stratification underpins an 'egg box' curriculum.
4. Curriculum is research-led in the sense that it asks students to think and act like researchers in the domain (Kenny, 1998; Jenkins, 2002)	Curriculum is teaching-led.
5. Teachers' working assumptions about learning resemble the malleable assumptions of practical and emotional intelligences: creativity can be developed	Teachers' working assumptions about learning resemble the 'you've either got it or you haven't' assumptions of IQ
6. Learning environment design based on complexity theories, which is to say, trusting good learning processes in environments designed to contain plenty of affordances for freshness	Curriculum design based on Fordism or Taylorism, which is to say predefinition of outcomes and arrangement of learning processes to sweep learners to those outcomes
7. Focus on processes of learning.	Performativity and measurement of prescribed outcomes
8. A system that invests in supporting individuals, albeit often as members of small groups.	A batch-processing system with an emphasis on efficient throughput
9. Negotiation of goals and means	Prescribed goals, limited choice of means
10. Individualised learning — students have a great deal of choice between modules	A common curriculum — students follow more or less the same set of modules.
11. Plenty of choice within those modules which are designed to support creative learning	Little choice within modules. Possibly much choice between modules
12. Spaces for metacognition — for reflection, portfolios and conversations. <i>Personal Development Planning is seen As an important vehicle for valuing student Self-identity and personal creativity.</i>	Emphasis on content coverage
13. Assessment is for learning	Practices that concentrate on the measurement of learning
14. Students are equipped to negotiate assessment, and are able to recognise and evidence their own learning	Little room for negotiation over assessment.
15. Assessment process viewed holistically encouraging students to make connections across their portfolio of learning.	An atomised view of assessment in which students simply traverse the assessment hurdles without any real attempt to engage them more holistically in applying their knowledge and skills across the curriculum.

Appendix 4 Creating space for creativity in the curriculum - questions and suggestions from Tait (2002)

1. Creative edges of curriculum	
<p>If we consider the institutional regulations and procedures, QAA subject benchmarks and perhaps Professional Body requirements, where are there affordances and opportunities that encourage open-ended approaches to learning?</p> <p>Where is there support for innovation in my own institution?</p> <p>Large-scale curriculum reform may be underway but this takes time and commitment. Where are the gaps for tinkering with curriculum and experimenting with creativity in small ways?</p>	<p>E.g., to meet the key skill requirement: "Improving own learning and performance" students may be encouraged to develop reflective and connected thinking - a process-focus can encourage creative approaches</p> <p>Join a project e.g., to develop the use of new media or in support of widening participation agendas</p> <p>Looking across a whole programme, there will probably be duplication of assessed outcomes and procedures: in one module or unit, we might substitute <u>one</u> pilot assessment that encourages uncertain or unspecified outcomes.</p>
2. Creative spaces for our own development	
<p>Beyond the immediate time pressures and compliance requirements, how can we create time and space in our workloads to allow us to think creatively?</p> <p>Where do we reflect on and learn from experiments that work / don't work?</p> <p>Where are there colleagues we can trust with our 'unfinished' ideas and share our 'mistakes'?</p> <p>How do we <i>already</i> work creatively around or with problems?</p>	<p>Participate in a recognised course, programme or workshop about learning and teaching</p> <p>Talk and think with colleagues informally - across disciplines and institutions (e.g., ILT and LTS networks) and use other CPD opportunities</p> <p>Practice re-framing and work-around strategies - dare to think differently</p> <p>Appreciate where we are already being creative in adapting and responding to situations (bricolage)</p>
3. Space for learners	
<p>How can we transfer ideas about what supports our own creativity to the curriculum environment we create for students?</p> <p>Students are driven by assessment - how can we use this to encourage creativity?</p> <p>How can we manage our relationships with students so that we know they learn what we teach?</p>	<p>Creativity is a social process - develop trust through low-stakes collaborative work</p> <p>We learn from 'mistakes' (our own and other peoples) - assess process and participation, not always 'success' (e.g., learning logs, online conferences)</p> <p>Encourage students to negotiate how they demonstrate their achievements as outcomes, to serve <i>their</i> purposes, as well as ours.</p> <p>Trust our students to learn in and from the curriculum we have designed - keep reflecting with them.</p>
