Creativity and Critical Thinking for teachers in training

Steve Padget

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Creativity and Critical Thinking

Steve Padget

Chapter 1

An Introduction to Creativity and Critical Thinking

What is creativity and how does it manifest itself in the classroom?

What is critical thinking and how does it relate to creativity?

What implications are there for the design and delivery of learning?

Initial thoughts

Before we begin to look at the definitions of creativity and critical thinking we need to look at three factors which contribute to what could be called the landscape of learning as we see it in the school context, they are; the learning environment, the learning curriculum and the content curriculum.

The learning environment is the result of a combination of factors, physical, social, intellectual and cultural. It will be shaped by details brought by the learners; the orientation and stimulation provided by their own history, their surroundings and the quality and range of social interactions that they enjoy. These together provide the learner with what they know, what they bring with them, and it is essential that
teachers value this and know what happens outside the confines of the school in the world of the learners they work with.

Then there is the learning curriculum; this consists of the active development of those habits of mind, those interests, values and beliefs and the sense of identity that a learner brings with them, often, initially, unformed and lacking in direction. These are the learner’s dispositions, they are malleable and changeable, and can be developed and nurtured to form the habits of mind that will fuel the learning journey. In his extended introduction to Friere’s ‘Pedagogy of Freedom’ (1998) Stanley Aronowitz argues that the aim of education must be to contribute to the development of the active knower and to do this the learner’s dispositional starting point has to be known.

Finally there is the content curriculum; that body of knowledge, skills, ideas and concepts that are to be taught over a given period, the cognitive tasks of the learning journey. Although to some the National Curriculum can seen as being restrictive and content driven there are many who have approached the necessary task of delivery in imaginative and creative ways to the benefit of themselves and the learners they work with. Schools that have adopted a creative learning ethos, Schools of Creativity and Thinking Schools for example, are succeeding in delivering the National Curriculum in ways that richly benefit the learners in all aspects of their cognitive, social and dispositional development.

Creative learning and teaching starts with the adoption of a particular view and understanding of the dynamics of the learning process and the respective roles of both teachers and learners in that process. We need, therefore, to examine the positions of creativity and critical thinking in the stimulation and support of what has been called deep learning as the three factors above are brought together. The following points serve two purposes; they open up the discussion about the subject and in so doing they give purpose to the chapter.
• Teachers are being creative when they are using pedagogical approaches that involve both themselves and learners in looking at possibilities, looking for flexibility, taking risks and experimenting. Creativity is being employed when there are unusual and exciting learning opportunities which provide high quality stimuli combined with the structure to generate enquiring language and provide deep support for the learners’ thinking and efforts.

• Learners are being creative when they are fully engaged in making meaning together through stimulating learning tasks of which they feel ownership, they will feel confident enough to make speculations and assertions, and feel empowered to articulate their learning to any of the other people round them.

• Learners are thinking critically when they step back and reflect on what they have achieved in relation to a desired outcome; when they can discuss and evaluate these achievements either individually or collectively against appropriate criteria and be conscious of and be able to comment on the quality of the process of which they have been a part.

• What links each of these ideas is the planned and deliberate use of language stemming from a clear understanding of its importance as an integral part of thinking and learning in a social context.

The teacher’s traditional position as didact and fount of knowledge is no longer an acceptable model. This caricature figure pouring knowledge into tousled and leaking heads has given way to that of the teacher who is in tune with learners, who will enter into discussion with learners and provide the appropriate interactive learning opportunities and levels of support in the pursuit of those same learners’ agreed aims – the ‘sage on the stage’ has given way to the ‘guide on the side’ (King, A.1993), the monologic has given way to the dialogic and the transmission model of teaching has been superseded by a more effective, learner centred interpretational approach.
The repositioning of the teacher has only come about because of the changes that have taken place in the understanding of the learning process and the theories of learning that have been developed from research, massive in scope and minute in detail. The developmental process that is education continues to have a number of drivers that we are all well aware of; philosophical, cultural, ethical and moral as well as political and economical influences are present in the ways that national education is organised and the ways that learning in the classroom is managed. Whilst it has to be said that not all of these influences are always in harmony, there is evidence in classrooms of the greater understanding of some very important learning and teaching principles which have initiated positive developments in practice for the benefits of learners and teachers alike.

The understanding now, lead by such bodies as the Campaign for Learning, is that rather than accumulating knowledge as such learners should be guided towards the acquisition of skills and competences that are needed to access, select, process and evaluate information relating to the knowledge they seek and this aim should be pursued as diligently as the teaching of the knowledge itself. These have been identified as Claxton’s ‘4Rs’ or the ‘learning dispositions’ of Resilience, Resourcefulness, Reflectiveness and Reciprocity (Gornell et al, 2005). These are the starting points of self awareness that are available for use when tackling a cognitive task – and teachers need to have a practical understanding of these dispositions, and of their role in modelling and nurturing the development of these life skills in learners. The phrase ‘learning to learn’ comes to mind here and the metacognitive implications associated with that. Just as part of the teacher’s role is to enable learners to reflect upon their learning and to understand how they have achieved and what they have achieved against the appropriate criteria, they too must make critical reflections on their practice. Those dispositions possessed of the teacher must allow them to be the teacher-learner as well as the learner-teacher, for ‘there is no teaching without learning.’ (Freire,1998, p29)
There are those who still imagine knowledge as a personal possession acquired in private, but increasingly the view is that knowledge is a social entity – something shared – ‘the essence of human knowledge is that it is shared’ (Mercer 2006, p6) and as such is part of the human sociocultural fabric. Willis, (2009) argues that ‘within the sociocultural paradigm, learning is viewed as the process of participating in a community of practice, where expertise is developed in social as well as cognitive ways through use of cultural tools learned by working alongside more expert members.’

This, in a nutshell, is the social constructivist view of learning, rooted in the work of Vygotsky and based on the understanding that learners are active creators of meaning and the principal cultural tool is language. Subscribing to this strongly held and well supported view demands that we assess what we mean by learning - the noun, as well as learning – the verb and be aware of the profound implications for the pedagogies that are adopted in response to that understanding. Learning and teaching arrangements should be used that strive to facilitate meaning making in a social context and the development of the classroom as a community of enquiry where social methodologies are the norm and learners move to an understanding of the power of their own language as creative learning and critical thinking takes place.

Creativity and critical thinking can, in my view, be regarded as two sides of the same coin. Nickerson (1999) says that ’it can be argued that to think well requires both creative and critical capabilities, that neither can be effective without the other’. These are not therefore mutually exclusive personal attributes and part of the role of the teacher is to provide the appropriate stimuli and environment that will allow both to develop in concert. The development of these will define the individual in life.

Towards a definition of creativity
Whilst it may be considered impossible to define the process of creativity, the creative outlook of a person and the products of creativity are observable (Feist, 1999, p274) and it is in the nature, quality and context of these products, the thoughts, actions and outcomes, that our definition will ultimately lie. The learning process itself, according to Paulo Freire, should be regarded as a creative force.

The concept of the highly creative individual, the person locked away and alone, producing work of aesthetic beauty or scientific magnitude is a romantic vision and does not help our cause when we are trying to find a realistic, workable, contemporary definition of creativity. Most modern human achievements are the result of team work; groups of individuals - jigsaw puzzles of different and coordinated talents and aptitudes, experiences and enthusiasms working together with a shared vision to create a feature film, or a TV advert, a motorcar, a drug to fight disease, a curriculum – these are the results of collaborative creativity. ‘It would be a mistake … to view creation as a wholly individual act. In many ways creation also involves co-creation.’ (Carter, 2004, p27). To this we should add, therefore, that ‘creative thinking involves cognitive processes that occur in a context. These processes involve novelty in one or more of the processes that lead to creative outcomes.’ (Halpern, 2003, p398).

Since the 1950s and specifically since the work of J. P. Guilford (1950) the idea of creativity as being something that all learners possess in some degree has gathered pace and over the years the definition of what is meant by the term ‘creativity’ in an educational context has become refined even though as we search the literature we see that the term is still subject to multiple definitions. Arthur Cropley (2001) talks of ‘general creativity’ as being that quality possessed of all people in some measure as a function of an individual’s personality and intellect and the relationship they have with the varied components of their cultural environment. He contrasts this with ‘assertive creativity’, that which we would associate with the possession of talent and the particular achievements of artists, writers, musicians and architects, for example.
This is echoed in Anna Craft’s writing when she talks about ‘big C creativity’ and ‘little c creativity’; the point here being that the latter is that day to day quality in everyone, learner and teacher alike, that is the germ of learning.

The relationship between creativity and intelligence has been discussed in great detail and researchers have variously seen it as being an integral part of intelligence or as a separate but related entity; it is widely accepted now that creativity is an important element in the mental make-up of everyone. To confuse intelligence with creative talent is a common error but research has shown that there is little correlation between creativity and IQ scores. Yes, creativity is a key human feature but it is important to realise that a learner’s creativity will not develop to full potential if the right conditions are not provided for this to take place. The implication therefore is that schools need to understand the importance of explicitly and directly nurturing the creativity of the pupils and the teachers within the institution.

Creativity and critical thinking go hand in hand and help to provide different ways of making sense of a situation; after applying analytical and logical critical thinking to our problem we can move towards the construction of a solution using our creative thinking. This is the place where creativity and critical thinking meet as we then go on to assess whether the solution we have arrived at is the best solution available. We will know this because we will have applied our critical thinking to the results of our creative thoughts. As we edge towards a working definition of creativity that will be meaningful in the context of learning and teaching it is essential that we focus on the dispositions of both the teacher and the learner and appreciate how these impact on the products of their creative endeavours knowing that in school these are intimately linked. Carter (2004) echoes the work of Cropley when he says that in the definition of creativity we must look at the idea of novelty. Cropley (1998) talks about ‘effective novelty’ and how when novelty can satisfy certain criteria (technical, professional, aesthetic, scholarly) it can lead to creativity. Rather than ‘effective’, Carter (2004). uses the term ‘appropriate’ in his definition ‘… creativity is
an ability to produce work that is novel and appropriate.’ In his review of a range of eminent definitions of creativity Mayer (1999, p450) finds that the features of originality and novelty are repeated again and again as being key components of creativity as are those of usefulness, significance, appropriateness, value and utility. Further, the ‘adaptive criterion is [also] necessary to distinguish truly creative thinking from merely different and/or pathological thinking.’ (Feist, 1999, p274) (my italics).

Our working definition of creativity needs to be capable of describing something that can be applied to all areas of learning and include those experiences that take place beyond the school environment, in neighbourhoods, in communities (both real and virtual) and in homes. By doing this we avoid giving the idea that creativity is something belonging only to the school environment and the learning experiences that take place in school.

We need to think of the following as factors to bear in mind when working towards a definition of creativity in the context of learning and teaching:

• **Creativity as part of the school ethos.**
  There must be an understanding that when effective there is an ethos in the school that values highly and allows for the sustained and long term development of creative pedagogic skill and experience. ‘Creativity is wasted if it simply translates into the occasional burst of light relief.’ (Claxton, Craft & Garner, 2008, p168).

• **Creativity is common to all.**
  The assumption that the ordinary person can be creative (Craft, 2003) and it is our creativity that allows us to handle the novelty of everyday situations of problem recognition and problem solving combined with the ability to evaluate possible solutions and reflect on the success of our actions (Halpern, 2003).

• **Creativity is social.**
The need to appreciate that the landscape of effective learning and creativity is a social landscape and that we learn better when we learn together. The social setting might be a school classroom, but equally important is the family setting and that of the neighbourhood, community, culture and the wider physical and cyber environment.

• **Creativity is rooted in the use of language.**
  The definition must also recognise that language, and specifically the dialogic use of language, is a fundamental component of creative thought and of learning. ‘dialogue becomes not just a feature of learning, but one of its most essential tools.’ (Alexander, 2008)

• **Creativity is closely linked with critical thinking.**
  It has to be able to recognise that creativity and critical thinking are linked and when we promote and facilitate the one, we necessarily promote the other.

• **Creativity is seen in the learning approaches adopted.**
  That in the context of school our definition needs to be suggestive of that range of pedagogies that will tap into, harness, exercise and thus strengthen the general creativity that exists in all teachers and learners and do this in a dynamic way but the focus should be on the ordinary rather than the extraordinary (Craft, 2003).

• **Creativity is seen differently in different cultures.**
  An understanding that creativity is not culture neutral. There should be recognition of the current trend of many national educational policies around the globe to include explicit references to the value of creativity in an educational context. This has been seen as indicative of the growing power of Western liberal individualism and the cultural value set and view of self that this espouses which, in general terms, is in marked contrast to that of the Eastern Confucian traditions of collectivist conformity. (Craft, 2005)
Our definition of creativity in the context of the secondary school classroom is, therefore, going to be multi faceted and complex and more of a contribution to the ongoing discussion than something definitive, more of a starting point than a finishing point in that discussion.

Towards a definition of critical thinking

When examining some of the literature on the current ideas surrounding ‘critical thinking’ we become conscious that this term is also open to a wide range of interpretation. Undeniably it is a ‘complex and contested construct’ (Halpern, 1998) and, like creativity, it is neither culturally nor politically neutral and it is the core process of transformative learning. It is part cognitive skill set, part competence, part disposition and we find that a number of writers see the value of effective critical thinking as being firmly rooted in the Western concept of what it is to be a contributing, participating member of society (Craft, 2005, ten Dam, 2004). The teaching of critical thinking could therefore be seen as a necessary part of education for ‘critical’ democratic citizenship, a required ‘citizenship competence’ (ten Dam, 2004), an essential part of citizenship education (DCSF, 2007) as well as being part of the cognitive skill set needed for competence in higher order thinking. Matthew Lipman and Robert Fisher (2005) share this view. Lipman, the creator of Philosophy for Children, describes critical thinking as being ‘rational deliberation relevant to a democratic society.’ (Lipman 1991). Robert Ennis describes it as ‘reasonable reflective thinking that is focused on deciding what to believe or do.’ (Ennis 1991) Michael Scriven and Richard Paul’s definition of critical thinking goes like this: ‘Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.’(Scriven & Paul, 2003).

A variety of ways of describing thinking in the context of learning have been developed over the years with attempts made to define different kinds of thinking.
Benjamin Bloom (1956) saw three domains of educational activity: cognitive (to do with knowledge), affective (to do with attitude) and psychomotor (to do with skills). From the cognitive domain was developed the widely used hierarchical taxonomy of skills which comprise knowledge, comprehension and critical thinking whence we get the notion of higher and lower order thinking skills. 1977 saw Gagné's proposal of the 'Five Learned Capabilities' these being: intellectual skills, cognitive strategies, verbal information, attitudes, and motor skills. One of the key values of this idea is its ability to distinguish between abstract and concrete definitions of learning. The thinking skills taxonomy developed by Swartz and Park (1994) is often seen as being more useful than Bloom's because of its greater detail and its non-hierarchical arrangement and certainly the detail that it goes into is illuminating and could be very useful for teachers approaching the issues raised by this chapter as they look for access points that would enable them to develop their planning in thinking terms. More recently Anderson and Krathwohl’s taxonomy (2000) has sought to modify Bloom by, amongst other adjustments, putting creativity (and the associated skills of planning, generating and producing) at the head of the list.

A consideration of the elements comprising Bloom’s hierarchical taxonomy of learning domains - Knowledge, Comprehension, Inference, Application, Analysis, Synthesis, and Evaluation can provide a useful starting point for our consideration of the concept of critical thinking. These six learning domains are described by Jennifer Moon as the ‘tools for the manipulation of knowledge’ (Moon, 2008) and therefore very valuable when teasing out the different components of critical thinking. As we look at the skills of application, synthesis and evaluation, we see elements that suggest an ability to find and to solve problems, elements of evaluation and judgement, there is an implication that the critical thinking process takes time, energy and a high level of concentration. We have to conclude that there is a discrete skill set associated with critical thinking that has to be learned which also includes elements of reflection and metacognition as pointed out by Diane Halpern (2003): ‘Critical thinking […] involves evaluating the thinking process - the reasoning that went into the conclusion we’ve arrived at or the kinds of factors considered in making a decision.’
The skills usually associated with critical thinking, often called ‘thinking skills’, but more usefully referred to as features of critical awareness, are considered to be:

- the ability to analyse complex issues and problems;
- the recognition of different points of view and assumptions;
- the skill of evaluating these against a range of accepted criteria;
- being able to make inferences and draw conclusions based on available information;
- the ability to transfer these skills across subject boundaries;
- and to see the interconnectedness of ideas and insights.

This could seem a daunting list. How can the practice of these skills be incorporated into the everyday classroom? Are these not skills that would be beyond many learners? The answers to these questions can be found in some of the techniques mentioned in chapter 7. In the case of critical thinking the use of the community of enquiry approach is one way of developing not only the skills of critical thinking amongst learners but also the motivation and the self discipline that is needed. Such techniques at Philosophy for Children and Mantle of the Expert have been designed to provide support for both learner and teacher in carrying out enquiries which develop the use of critical thinking faculties at the appropriate level.

**Teaching as creative enterprise**

General creativity is a complex human mental process manifested to some degree in the dispositions and products of all individuals and groups. It is seen in the problem solving of everyday life, it is the spark that drives learning. It is susceptible to the features of the physical, intellectual and cultural environment and can be developed and nurtured, or indeed stifled, by these. In Western liberal democratic society it is
seen as the driver of self actualization leading to the development of economic and social progress.

Creativity is, therefore, at the heart of good learning and teaching, the whole multidirectional social enterprise that takes place between learner and learner, learner and teacher is a creative process based on the growing facility of the learner’s language and the way the teacher’s understanding of this enables the creation of a learning environment that is promoting and nurturing of rich language. Creativity is inextricably associated with critical thinking; they are interrelated processes.

In the classroom where creative learning and teaching takes place we see evidence of a variety of features. There is a profusion of ideas and those ideas are celebrated fully in the shared learning space, there is evidence of richness in the use of language by both teachers and learners and that language is used to generate, elaborate and share ideas, speculate, hypothesise, experiment and wonder. Imagination is valued and there is evidence of cooperation, collaboration and sharing, of support and the mutual respect of a variety of opinions. In a creative classroom there is always the possibility of synergy, there is always the possibility of something special happening. The key to this is the quality of the environment and it is easier, according to Csikszentmihalyi, to enhance creativity by changing conditions in the environment than by trying to make people think more creatively. (1996).

It is easy to misinterpret the word creativity in the context of the classroom and the learning that goes on there. For some people that misinterpretation sends shudders down their collective spine as they imagine ungoverned learners being allowed to express themselves in disorganised and random ways. The pursuit of creativity seems to be a cover-up for bad and unruly behaviour, clearly indicative of disorganised thinking, unfocused learning and an at least tacit promotion of an attitude of general non-compliance. Edward de Bono, however, makes the point that creativity is very
serious and to imagine that it is just brainstorming and coming up with unfocussed ideas is to show a deep misunderstanding of the issue. (de Bono, 1992). Robert Fisher lists four common misconceptions about creativity: that it is unrelated to critical thinking; that it is found in some subjects but not others; that creativity is simply doing your own thing and that creativity requires a high IQ. (Fisher, 2005), and there are still those who regard creativity as being more to do with art, music and literature than to do with maths and science and the humanities. There are examples later in this book that show how a creative approach will enhance the learning in a range of subject areas and not all are necessarily considered arts areas.

Teaching itself is a creative enterprise and the creativity of the teacher is applicable in any subject, it is a combination of generic skills that need to be developed and consciously crafted over time. In chapter 3 Best and Thomas propose that the creativity process is common to all areas of human endeavour and can be understood through a Creativity Cycle comprising eight distinct steps. Creativity has a place in all aspects of the planning, construction and delivery of learning opportunities, but broader than that, it has to be part of the ethos of the school and woven into all aspects of the school’s life. All Our Futures (1999), the NACCCE report to the Blair government on creativity in schools, inextricable binds creativity with cultural education and takes an holistic view seeing it as being necessary to balance creative and cultural education. This, the report suggests, is to be achieved by means of the development of a ‘systematic strategy’ by a school which takes into account the curriculum, the pedagogies used and the means of assessing learning as well as the need for a strong and dynamic relationship between the school and the wider community. There is also the recognition of the implications for resources for in-service training and staff development as in recommendation 36 we see the suggestion that funding should be made available for priority in-service development and support of: ‘creative teaching and learning; creative thinking skills; the arts and humanities; teaching for cultural understanding.’ (ibid p.200)
The use of creative techniques capable of promoting and developing critical thinking is necessary for learners of all abilities. Learners thrive when given cognitive challenges and are allowed space, time and the right environment to take up these challenges and think for themselves. At its root this issue is about how effectively teachers equip all their charges with the necessary life-skill tools. It is a rights and responsibilities issue and very much to do with how learners view themselves and how they understand their role in society and the sociocultural route that they need to take to get there. There are a number of methodologies which explicitly promote critical thinking techniques and provide teachers with the procedural guidance and learners with structure, stimulus and challenge to move towards group solutions to problems and decision making. A compendium of these tools of the trade, as it were, of the creative teacher is given in Appendix 1 and there is a summary of each of these approaches in chapter 8 along with links to resources and support.

**Infusion or immersion?**

It is not hard to see the core status of the skills associated with creative and critical thinking and, further, to realise that a teacher’s understanding of them is essential carrying with them very clear implications for the design of learning in terms both of procedure and process. The discussion that needs to be had is about whether these skills should be taught in a non-explicit way through the delivery of the curriculum - the ‘immersion’ method; or taught explicitly across the curriculum - the ‘infusion’ method. ‘Infusion takes place when critical thinking principles are somehow made explicit’ in the course of teaching curriculum subjects (Ennis, 1997). Should these skills be taught, then, or allowed to be caught? In the case of immersion research has questioned whether the thinking skills practiced in one curricular area are transferred either into other areas of learning or into the situations of everyday life. Marin and Halpern found that learners, both high and low achievers, benefitted most from explicit instruction and repeated practice (Marin & Halpern, 2010). In the report on the ACTS project (2000) Carol McGuinness also supports infusion. In this research the rationale was that if learners are to gain the skills of thinking flexibly and making reasoned judgements this cannot be left to chance. Consequently in the
ACTS project curricular topics were identified and lessons were devised that allowed curricular objectives and thinking skills (based on the Swartz and Park taxonomy) to be simultaneously and explicitly pursued (McGuinness, C. 2000). It is suggested by both Sternberg and Ennis that a mixed approach could be the way forward in most situations, where both explicit and implicit methods are used deliberately and thoughtfully across the curriculum and here lies the major implication for schools.

**Thinking schools**

In order for learners to improve their critical thinking there does need to be a major change (Halpern, 1998) in the way the teaching and learning process is viewed. Not only do we need a development in the mindset of teachers, a growth in the understanding of the importance of these skills for learners, but there needs also to be a development in the teachers’ confidence in applying this understanding to the practice of the classroom. Use of infusion techniques does demand a degree of explicit teacher knowledge and so there are implications for the initial training and continued professional development of teachers. The objective would be to create thinking schools, thinking classrooms and a thinking curriculum as envisage by McGuinness.

As discussed earlier the changes that have taken place in the relative positions of teachers and learners are indicative of something more than just social changes. These changes show the impact of developments that have taken place in the understanding of the learning process and also that there needs to be a reappraisal of what actually happens in the classroom; how the interactions and transactions of learning take place as well as what should constitute curricular content and how learning should be assessed. Here is a paradigm shift that says something about a move towards a particular vision of the classroom process which is focused more on how learners learn than how teachers teach. Schools in which such a reappraisal has taken place are different; the way they talk about themselves and describe what they
do is different; they have the self confidence to talk explicitly about the learning and teaching that takes place rather than simply describe the syllabi used; there are structural differences in the ways that learning is viewed and organised and the observer can see a richness in the learning diet across and beyond the curriculum with links into the wider community. But most importantly, it is possible to see the philosophical roots of the thinking behind the shared ethos that runs through the entire establishment.

The University of Exeter’s web page ‘Becoming a Thinking School’ has the following definition: ‘A Thinking School is an educational community in which all members share a common commitment to giving regular careful thought to everything that takes place. This will involve both students and staff learning how to think reflectively, critically and creatively, and to employing these skills and techniques in the co-construction of a meaningful curriculum and associated activities….’ (Burden, 2006). This clearly demonstrates the position that the schools already accredited by Exeter as Thinking Schools (55 Thinking Schools including 5 Advanced Thinking Schools, covering between them each of the key stages) have taken on learning and teaching. If we ponder but briefly on Paulo Freire’s assertion that ‘education … is an act of knowing rather than memorising’ (2003) we realise that the way learning and teaching is conducted has to be different if we are to be successful in our objectives of guiding learners towards the acquisition, the development and the effective practice of the skills and attributes mentioned above.

Summary

From the foregoing it will be clear that the contributors of this book are taking a particular stance in relation to core issues surrounding creativity, critical thinking and the relationship that these concepts have with learning and teaching. There is an understanding of the different relationships and the changing social dynamics of the learning experience that are formed when creative approaches are taken and there is an understanding that these factors can generate transformational learning experiences. There is also the underlying understanding that there is a need for
change if the work of schools is to be more effective in promoting amongst learners the aptitudes and attitudes that are necessary for a successful life in the 21st century.

**Creativity is:**
‘The application of knowledge and skills in new ways, to achieve values and outcomes’ (NCSL) or, to put in another way, it is ‘imaginative activity fashioned so as to produce outcomes that are both original and of value.’ (NAACE) and creativity thrives when it is identified, encouraged and fostered. The key features of creativity in both learners and teachers are: the use of the imagination, the pursuit of purposes, being original, judging value.

**Critical thinking is:**
A complex mixture of personal attributes, cognitive and social skills which will, given the right encouragement, grow in sophistication and effectiveness over time. In varying proportions the elements of critical awareness are: rationality, self awareness, honesty, open mindedness, discipline and judgement.

**Critical thinkers:**
Show critical awareness in that they are questioning, active and open minded, they are analytical and capable of making evaluations, comparisons and balanced judgements, they are organised and non-egotistical.

Creativity and critical thinking are very closely related and work together, they can be seen as two sides of the same coin. In the classroom there needs to be an awareness of the features, functions and power of each. Part of the dialogue in the creative classroom is about the understanding of how each type of thinking is working for both the learner and the teacher.

**Discussion Points**
- What effect does an understanding of creativity and critical thinking have on the teachers understanding of the learning and teaching processes?
- What effects can this understanding have on the transactions of the classroom?
• What are the benefits for learners of a constructivist classroom?

Useful web sources of information.

• Information on the Thinking School organisation can be found at http://education.exeter.ac.uk/projects.php?id=29
• *Defining Critical Thinking* by Scriven and Paul can be found at http://www.criticalthinking.org/University/univclass/Defining.html
• Edward de Bono’s thoughts and techniques can be found at http://www.debonofoundation.co.uk/

Bibliography

Mercer, N., 2006 The Guided Construction of Knowledge. Clevedon: Multilingual Matters Ltd,
Moon, J., 2008 Critical thinking, Oxford: Routledge,
Swartz, R. & Parks, S., 1994 Infusing the Teaching of Critical and Creative Thinking into Content Instruction Pacific Grove CA, USA

Web references

Government Documents
National Advisory Committee on Creative and Cultural Education. 1999 All Our Futures: Creativity, Culture and Education, The Robinson Report, London, HMSO.
Chapter 2

Creativity in – Creativity out

What are the personal attributes that teachers need to bring with them and develop actively as essential components of their professional practice?

What bearing does an understanding of teacher and learner language have on the notions of creativity and critical thinking and the learning transactions of the classroom?

What are the essentials of a creative learning plan?

Setting the scene

The purpose of this chapter is to examine some of the key ideas that lead us to an understanding of the importance of creativity and the role it plays in the processes of learning and teaching. At the head of the chapter are three key questions that teachers, those in training, those newly qualified and those with years of experience behind them, should be asking themselves. The quest for the answers to these questions will guide the teacher to affirm that there are personal qualities needed to be a successful and effective teacher as well as philosophical, ethical, intellectual and professional understandings.
The relationship between creativity, education and learning can be viewed at two levels: firstly, the macro level where creativity is seen as being a major driver of current national education policies across large parts of the world and, secondly, the micro level where we need to examine how notions of creativity influence pedagogic practice. This chapter has its focus more on pedagogy than socio-politics and looks at the implications an understanding of creativity has for the shape of learning in a school setting.

In Chapter 1 the idea was articulated that we all possess some measure of creativity, small ‘c’ creativity (Craft, A. 2002), which is part of that range of personal attributes, attitudes and dispositions that we bring to bear on the day to day situations that we encounter; it is the problem solving of life and it is the medium of learning. We now need to look further into how an understanding of this should inform the effective teacher and how it is essential that small ‘c’ creativity is brought into the classroom along with the other qualities and motivations. Creativity, of both teacher and learner, is a state of mind, and like all brain-based functions difficult to define, ethereal and elusive (Saebø et al 2007), and the ways in which it can manifest itself in the context of day to day classroom work are many and various and include the development in all learners of the capacity for critical thought.

Definitions

The terms ‘creativity’ and ‘critical thinking’ have been defined in many ways but for the purposes of clarity in this chapter the definitions iterated in chapter 1 can be recalled:

Creativity is:

1. The application of knowledge and skills in new ways, to achieve values and outcomes. (NCSL)
2. Imaginative activity fashioned so as to produce outcomes that are both original and of value. (NAACE)
Features of creativity are:
The use of the imagination, the pursuit of purposes, being original, judging value.
Creativity thrives when it is identified, encouraged and fostered.

Critical thinking is:
A complex mixture of personal skills which will, given the right encouragement,
grow in sophistication and effectiveness over time. In varying proportions these skills are:
Rationality, self awareness, honesty, open mindedness, discipline and judgement or,
in other words, the ability to make evaluations against appropriate criteria. These are
the ‘thinking skills’ that have been categorized by many writers as those of the
‘higher order’ to contrast them with the ‘lower order’ skills of remembering,
understanding and applying as seen in Bloom’s hierarchical taxonomy. Critical
thinking can be said to be one of the key objectives of education and Halpern’s
shorthand version of the definition is as succinct as it is illuminating:

\[ \text{Attitude + Knowledge + Thinking Skills = Intelligent thinking} \]

(Halpern, 2003, p7; after Russell via d’Angelo)

The relationship between creativity and critical thinking is close, almost symbiotic
inasmuch as creativity needs the ground that is prepared by critical thinking in which
to grow. One of the principal outcomes, therefore, of creative teaching is a growing
facility in learners to make appropriate and informed critical judgements that will be
seen as well grounded evaluations of relative worth as applied to their decisions,
their actions and all the elements of the sea of stimuli in which they exist. It is seen
by some researchers as being one of the essential skills needed to participate
effectively in today’s society - ‘If education is to further the critical competence of
students, it must provide them with the opportunity at the level of the classroom
and the school to observe, imitate and practice critical agency and to reflect upon
it.’(ten Dam, G. & Volman, M. 2004)
Developing a personal philosophy

If schools are to value appropriately, to nurture effectively and harness constructively the creativity of their learners those learners need to be guided by practitioners who possess a great deal of understanding of the importance of creativity. They also need to appreciate creativity as a component of the whole landscape of learning and this has to be reflected in both the content and the philosophical cast of training programmes. Responsibility for the development of this understanding is therefore divided between the teacher training institution or Graduate Teacher consortium and the school giving school based mentors a great deal of this weight. As the current modes of post graduate teacher training have developed the time available for taught sessions away from school has become increasingly squeezed. The onus now is upon the school to deliver effective input across a widening range of topics, the understanding of which is crucial to the effective development of the new teacher.

Whilst the apprenticeship model is to be commended for many things, it leaves the trainee with much necessary self study in some very important areas of understanding. There is a risk that the trainee will complete the programme being strong on day to day tactics but with a relatively underdeveloped grasp of the importance of a philosophically based strategic overview that is needed to inform both purpose and methodology. Successful performance in the classroom depends upon the acquisition of many skills, but it is underpinned by a clear working philosophy, even if that appears to be somewhat below the surface in the case of many busy teachers in the context of their day to day classroom and school responsibilities. The education of teachers is more than merely training in technique - it is rooted in the formation of the ethical self (Freire, P. 1998, p23) and the trainee will quickly realise that their journey towards success in the profession is one of personal discovery as well as professional development.
Philosophical development starts with the growing awareness of the child centred nature of the learning process, with the appreciation of how close is the relationship between language, thought and learning, culture and society and that 'effective teaching is much more than just a compilation of skills and strategies [but] is a deliberate philosophical and ethical code of conduct' (Larrivee, 2000) and that the practising teacher is making ‘a purposive cultural intervention in individual human development which is deeply saturated with the values and history of the society and community in which it is located.’ (Alexander, 2005).

At the outset of their learning journey aspirant teachers frequently and understandably recall and, initially at least are inclined to imitate, the models of learning and teaching with which they are familiar, based on their own experiences as school learners. This is reflected in the findings of recent research (Davies, D. Howe, A. et al 2004) and it is not confined to younger trainees on post graduate courses. For some of the older EBITT trainees, those that are seeking career change, the models of learning and teaching that they recall can be markedly different from the current practice. All trainees embark upon the programme wanting to be teachers, wanting to teach their classes about the things that they know, those things that have provided them with their own life’s stimulation and motivation, and they sometimes find it hard to make the necessary adjustment to their perception of how a creative teacher operates. Trainees are therefore to be encouraged to move away from the suggestion of a ‘banking’ concept of education where the learners passively receive that which is owned by the teachers, filing and storing deposits of information (Freire, 1970) towards a model of personal transformation that puts the learner in the centre of the picture, a model where teachers and learners are asking questions, solving problems, making connections and making meaning dialogically. Creative teachers realise the importance of knowing the situatedness of the learners; they guide rather than tell; they model learning and create possibilities for the construction of meaning rather than the dispensing of knowledge.
Those initial training programmes are to be applauded that enable trainees to explore their own creativity and come to terms with its potential for their own learning and that of learners. Trainees will benefit when they are given the opportunity to gain an understanding of the development of creativity in learners and an understanding of how this can be identified, encouraged and fostered. Craft emphasises the development of the relationship with self and others that is at the heart of creativity and that this can only take place in a ‘self-knowing’ training programme. (Craft, A. 2000). For this to happen there needs to be emotional support, a coherent and supportive trainee network, and the opportunity in the structure of the programme for trainees to receive effective feedback that is away from but linked to their learning and teaching situation (ibid). The importance of the personal development that takes place during the programme cannot be understated and for many is it profoundly life changing.

The particular attributes of trainees that are scrutinised and actively developed in training and beyond are these:

- A commitment to the development of their own and others’ learning.
- A view of themselves as being creative individuals.
- A commitment to sharing ideas.
- An open mindedness to innovation and flexibility of approach.

To these, as the training progresses, will be added professional, technical and ethical understandings including:

- A developing concept of the term ‘creativity’ taking it from a narrow arts and performance based concept to an appreciation of the broader implications of creativity in the context of the learning and teaching experience;
- an appreciation of the close relationship that exists between creativity and critical thinking;
• a rapidly growing repertoire of creative teaching strategies with the confidence, understanding and ability to deliver them;
• an awareness of the distinctive dynamics of the creative classroom;
• an explicit understanding of the centrality of language in the thinking and learning process and the implications of this;
• the ability to reflect critically in order to grow professionally and learn from experience.

A coherent personal philosophy of learning and teaching will develop as depth of understanding increases with experience. The details of this will be informed by active, detailed and insightful observation, planning and classroom practice and well directed reading. Teaching for creative learning and the development of critical thinking demands that we look at the learning process in a constructivist way where:

• The learner is placed at the centre of the learning process.
• Curricular arrangements are developed to suit the learners’ prior knowledge.
• Learning is based on searching for and making meaning and problem solving in a dynamic social setting.
• Methods are used that enable learners to make new connections thereby gaining new understandings.
• There is an expectation that learners’ analyses, interpretations and hypotheses will be valued as key steps of learning thus promoting critical thinking skills.
• The language life is democratic and rich with dialogic transactions based on the use of open, rich and provocative questions.
• Learners learn how to take part in the assessment of their progress.
• And, fundamentally, that the activity of teaching is not the transfer of knowledge, but the creation of possibilities for the construction of knowledge.(Freire, P. (1998) p30)

Creativity and learning
The nature of creativity and its relationship with learning has been discussed widely and vigorously, the value of this discussion is that it has served to focus much attention on the nature of learning. This has taken place in the context of the rapidly developing understanding in neuroscience and in the psychology of learning as well as the development of socio-cultural and social constructivist approaches to learning in particular. This has resulted in the existence of a much more focused and coherent literature than was the case in the recent past when much of what existed was the result of the drive to develop simple behaviourist theories (John-Steiner, 1996). From the socio-cultural perspective we need to examine the range of opportunities that learners must be given for meaning-making by using imaginative and inclusive pedagogies that involve, amongst other things, the appropriate scaffolding of learners’ efforts and the modelling of teacher disposition (Craft, Cremin et al, 2007). The creativity of the teacher is then brought to bear on the ways in which these, and the growing capacity for critical thought, become the weft and warp of the learning experience.

The visible products in the classroom that are a function of creativity can be seen in, for example, the ways that problems have been solved and the quality of both the conclusions arrived at and of the decision making process itself. There is richness in the thinking activities and the beneficial effects on the learning can be seen. There are some subtle understandings present that will make the experience of the learners more inclusive, more dynamic, more purposeful, more collaborative and more effective with enhanced cognition and metacognition.

Much research has concluded that the benefits of encouraging and facilitating creativity are many in terms of personal development and the growth in learners’ capabilities. Pupils who are encouraged to think creatively and independently become more interested in discovering new things for themselves, more open to new ideas, keen to work with others to explore ideas, willing to work beyond lesson time when pursuing an idea or a vision. As a result of this, it has been discovered, their pace of learning, levels of achievement and self esteem all increase (NACCCE 1999). Positive
dispositions, whilst they may already exist to varying degrees in the make-up of learners, have to be dynamically nurtured and encouraged, this development cannot be left to chance. All Our Futures (1999, p95), proposes the need for teachers to be mindful of three key issues:

- The need for the teacher to be adept at identifying creativity both in themselves, and in the learners. Teachers should be looking for creative, imaginative and stimulating possibilities in the planning and the structuring of learning; they need to develop the ability to recognise and acknowledge the value in the pupils' utterances, responses and products of learning and to be able to respond appropriately.

- The importance of being able to encourage creativity in learners by allowing them to feel comfortable in taking chances and in seeing new possibilities. This needs to come from the teacher’s own enthusiasm, their depth of subject knowledge, the fact that their presence in the classroom models a creative outlook which is manifested in the methodologies used and the understanding of the power and purpose of these and the value of the resultant climate that is created in the class.

- The importance of fostering creativity in learners. Creativity generates creativity and just as this should be modelled by the teacher it should also be understood by the learners that they can learn from each other. This can only be done by considering actively the class arrangements - groupings, physical layout, the management of learning – and this implies a clear understanding of why the particular arrangements have been chosen. Within the structure of these arrangements is the need for the feeling of learner inclusivity to be infused in the class where everyone, including the teacher, is a co-participator, a co-creator, part of a joint endeavour. (Craft, 2005)

**The creative classroom**
When we plan for learning which encourages critical thinking we are ourselves thinking creatively. The essence of critical thinking is a questioning and challenging approach to knowledge and Harrington (2001) lists a number of components that need to be present in a creative classroom that will allow for critical thinking to take place and describes what he calls the ‘creative ecosystem’ which, he suggests, consists of the following interrelated elements:

- opportunity for play and experimentation/exploration,
- a non-threatening atmosphere in which learners are secure enough to take risks and make mistakes,
- activities presented in exciting or unusual contexts,
- opportunity for generative thought, where ideas are greeted openly,
- opportunity for critical reflection in a supportive environment,
- children given a sense of engagement and ownership of ideas and tasks,
- respect for difference and the creativity of others,
- choices given to children in terms of resources and methods.

Each of these features makes important assumptions about the role and position of the teacher, about the nature of the thinking and the activity of the learners, and about the quality of the relationships that exist in that space all of which are transcendent of the curricular subject. The ‘creative ecosystem’ shows a clear recognition of the essentially social and collaborative nature of effective learning that contrasts markedly with didactic, transmission models of learning and teaching which only emphasise the worth of the individual’s solo achievements.

The successfully creative classroom is, therefore, a function of certain interconnected understandings. There is the presence of a learner centred model of learning and teaching with an understanding of the implications and expectations that this has for the teacher – learner relationship. There is an understanding of the essentially dialogic nature of effective learning and the power and the value of talk, to, with, by, and between learners in this. There is the understanding that this talk
cannot take place in a vacuum and arrangements made must facilitate this to create the desired creative climate.

One of the essential developmental skills of the teacher is the increasing ability to choose from a range of appropriate strategies and approaches over the course of time; good classrooms are places of flexibility and are responsive to learners’ needs. The creative climate alone is not enough and the teacher’s role must be seen as going beyond simply being an encouraging adult and must embrace specific active techniques and strategies. (NGFL Scotland, 2003). Chapter 7 provides an overview of key creative learning and teaching techniques that incorporate the collaborative use of language in child centred, meaning making and problem solving approaches. These are further summarised with references to principal works and authors in appendix 1.

‘Creative teaching is seen to involve teachers in making learning more interesting and effective and using imaginative approaches in the classroom’ (Cremin, T. 2009). Learning can take place anywhere and we are all aware of the power of the learning environment that is in itself stimulating by being unusual and unconventional perhaps; farms, zoos, playgrounds, fields, woods and so forth are all places where rich learning can take place. And the activities for learning can be equally varied be they digging in ruins, collecting leaves in forests or shells from beaches. However, as these situations do not provide the most usual day to day learning environment, being based in the prosaic surroundings of most classrooms, something has to be done to enliven and enhance and invigorate the learning space.

The physical nature of the learning space with its advantages and limitations is one thing, the décor of the room can be enhanced in enlivening and stimulating ways but walls, after all, are walls, and no amount of will power on the part of the teacher can alter that fact. However, there are more subtle creators of environment under the control of the creative teacher. Based on the understanding that learning is a social
enterprise and that how the teacher relates to the learners and the learners relate
to one another are the essential dynamics of the process, there are things that the
creative teacher needs to address in the construction of a space where there is
exploration, where there can be enquiry, where there is stimulation and where there
is support.

The creative classroom is a safe space, a place where:

- There is questioning and challenge.
- There is the opportunity to make new connections and see new relationships.
- Where learners are able to envisage what might be.
- Where there is the exploration of ideas and the where options are kept open.
- Where there is the mental space to reflect critically on ideas, actions and outcomes.
- Where there is the expectation that all are involved.
- Where there is support for and value of each learner’s efforts.

**Language and creative teaching**

The nature of the learning transactions that take place in classrooms has changed
considerably over time. Pedagogic approaches that were considered appropriate in
the second half of the 20th century are being replaced as the research based
understanding of the learning process has been deepened and refined, and as political
and cultural shifts have impacted upon the work of the classroom. But the informed
observer might also see the resistance to change that certain transmission models of
teaching show. There still seems to be a measure of reluctance in some classrooms
to embrace a more democratic, a more egalitarian form of teacher/learner discourse,
one which is built upon an understanding of the power of the active use of language.
Wolfe & Alexander (2008) see this, and the slow speed of change, as being evidence
of the dilemma faced by teachers as they grapple with the implications of the growing
research based evidence pointing to the need to allow learners ‘to reason, argue and adopt the habits of critical enquiry’. The implication, they suggest, is that changes in the way that schools frame knowledge and assess learning are as essential as they are fundamental.

In order to teach creatively an understanding of the need for the measured use of language has to be manifest and the planning process needs to look imaginatively and in some little detail at the nature of language use that is going to take place in the lesson. The widespread acceptance of the Vygotskian understanding that effective verbal reasoning is a skill developed in a social setting leads us to examine the importance of both the social and the language dynamic of the lesson. What balance should there be between different language forms such as telling and explanation, questioning, discussion and dialogue? What are the different functions and values of these elements of the repertoire? The effective use of language is the bridge to the learner and the teacher who knows this appreciates that language both manifests and structures thinking (Alexander, 2005) and is the foundation of learning itself. (Halliday, 1993)

The principal architects of the current research into the impact of dialogue on learning and sociocultural theory are, respectively, Robin Alexander and Neil Mercer and their main texts are listed at the end of this chapter. Here is a body of scholarship that clearly articulates the theoretical base, the research evidence and the practical implications that arise when the principles of dialogic talk in the class are used to underpin pedagogy. Mercer, (2000, reiterated in 2007, p133) coined the term interthinking, to describe the talk used by learners to think collectively, thus linking the cognitive and social functions of group talk. Alexander (2004) describes the nature of the different kinds of talk in the classroom and, having analysed these goes on to demonstrate how meaningful dialogic talk can be achieved. Both these eminent academics have conducted extensive research over a number of years and have agreed with Vygotsky’s claim that social interaction does in fact shape
intellectual development through the medium of language, the main human cultural tool.

For classroom talk to be dialogic it must have certain features: It must be collective, reciprocal, supportive, and also cumulative and purposeful (Alexander, 2004). It is collective because it is a social process; reciprocal because listening and responsive contribution takes place and it is supportive in the way utterances are received with linguistic and paralinguistic signals and reactions. It is also cumulative, utterances in response to questions move over time from being right or wrong to being cognitive stepping stones and the talk builds and moves towards planned purposes. (Alexander, 2004). The planned use of language therefore defines the learning that is going to take place in the class and there are features enabling of creative dialogue that need to be present. Fisher (2009) mentions twelve key features that need to be considered. These can be used to interrogate planning and, bearing in mind that not all twelve features need to be present in each lesson, over a period of time it would be useful to reflect on whether the teaching and learning that was being planned was including them collectively, in combination and individually, as integral parts of the child centred pedagogies being habitually used.

Does the teaching allow for:

- Opportunities for learners to ask questions?
- A shared agenda?
- The use of imaginative and exploratory language?
- The encouragement of alternative viewpoints?
- The reflective use of dialogue?
- How does the use of language define the learner/pupil relationship?
- Is persuasive language encouraged?
- Are there situations where a range of possible answers is expected, received and celebrated?
- Is language used as the medium of cooperative enquiry?
- Is the language used promoting of the personalisation of learning?
• Is the language used related to the inner purposes of the learners?

(Fisher, 2009, p11)

By looking at the language life of the classroom in an holistic way a potential can immediately be seen which makes the stultifying and much over-used 'Initiation-Response-Evaluation' teacher/whole class 'interaction' seem rather threadbare, lacking in cognitive effectiveness and loaded with negative and non-inclusive values. The ideas above allow us to think about the wide range of possibilities that exist.

The potential for a language rich classroom becomes reality when the art of the teacher’s questioning develops. This is necessary for the success of the learning and over time will develop into something sharply focused and powerful; deeper questions will lead to deeper enquiry. Meaningful arrangements of learners need to be used and the interactions between them need to be fostered, focused and managed. The teacher’s feedback will become informative rather than merely encouraging, it will become a real part of the progress of the learning dialogue, not merely inquisitorial or just indulgently appreciative. Moreover, the teacher’s questions will not be the only ones that are being addressed; learners will be framing and asking questions, they will be responding and feeding back to each other, this is learning in the socio-cultural round.

Creative planning for creative learning

From what has gone before it will be clear that the creative teacher is someone with a specific mindset able to see the importance of reflecting on questions about their teaching and about the relationship between that and creativity. They will have made the link between this and the encouragement and facilitation of critical thinking. They
will have begun the process of working out what they believe to be the function and purpose of the teacher’s role and the wider purpose of education. They will also be increasingly ready to see the impact that this understanding will have on planning, on delivery, the methodologies selected and the techniques used at different points in the lesson in pursuit of the lesson’s learning objectives. The Ofsted survey of creativity in schools concluded that ‘teachers were seen to promote creative learning most purposefully and effectively when encouraging pupils to question and challenge, make connections and see relationships, speculate, keep options open while pursuing a line of enquiry, and reflect critically on ideas, actions and results.’ (Ofsted, 2010)

Armed with the succinct definition that creativity is ‘imaginative activity fashioned so as to produce outcomes that are both original and of value,’ (NACCCE, 1999, p30) the planning process can begin. All Our Futures asks us to consider whether the teaching proposed in a lesson plan is going to be purposeful, original, valuable, does it involve the use of the imagination? It is useful to examine these issues more closely in terms of questions that trainees could usefully ask themselves, the parameters are: purpose, originality, value and exercising of the imagination.

Is the learning in this plan purposeful?

- Do you have ownership of the ideas? Will a freshness and a commitment to what you are doing come through?
- Has the learning plan aroused curiosity, emotion, interest, passion in you and is it, therefore, capable of arousing some of those feelings in the learners?
- Has there been some measure of co-construction and learner input thereby showing a responsiveness to the learners’ needs?
- Is the learning path and purpose clear and relevant to the learners and is there a clearly visible link between this work and what has gone before?
- Is the methodology chosen underpinned by the use of language and is it actively, engaging, inclusive, cooperative and encouraging of a range of learner-teacher dynamics?
Is there a measure of originality?

- What elements of this plan are original – and how is this originality demonstrated, for example the use of unexpected questions, unusual challenges, unusual outcomes?
- What elements of the plan will allow for the originality of the learners’ efforts to be stimulated and supported?
- How is the originality of the learning outcomes to be recognised in relation to work previously done?
- How is this achievement going to be celebrated?

Is the learning in this plan of value?

- Is it clear to you and the learners what the value of the learning contained in the plan will be in relation to its cognitive and metacognitive purpose?
- Is there an opportunity for you and the learners to critically appraise the achievements of the lesson and to share these appraisals?

Does this plan show imagination?

- Has a potentiating context been created, with an interesting environment, with unusual stimuli?
- Are there new ideas in the planning that can be enjoyed by both teacher and learners?
- Are there areas where the learners could be divergent, original, create unexpected responses and express alternative views and have them listened to?
- Is there a journey planned that will take the learners from the familiar into new territory?

**Evidencing creativity**

Through the active reflection contained in the self-evaluation of the lesson, the teacher will be able to make valuable assessment of the outcomes of the lesson
against both the cognitive and metacognitive objectives. Valuable as this process is, it has to be seen in the context of the assessment of the teacher’s performance and this begs the question of how the creativity in a lesson can be assessed. The issue here is whether the observer/assessor is appropriately briefed before the lesson and how well the documentation of the lesson is prepared; does this allow the observer to see a clear picture of the lesson’s ethos and intentions? (Robson et al, 2009) Does the plan make sufficiently explicit the teacher’s understanding of the relationship between language, thinking and learning? Is this understanding clear in the delivery of the lesson as well as in the planning?

The Teachers’ Standards document (DfE, 2011) does not mention creativity and critical thinking explicitly but subsumes these within the standards and subsidiary bullet points as with other details of pedagogic approach. The teacher will be assessed on the effectiveness of their overall performance, the assumption being that high quality components make a high quality lesson. The expectation is that part of the effectiveness of the teaching will be the demonstrable facility in the use of creative and imaginative techniques. It is worth noting that in the current Ofsted inspection framework evidence of the use of creative teaching techniques, good questioning and the promotion of wide and deep thinking can be commented upon specifically. This can be taken as an indication of the importance that is being attached to these components of creative teaching, and the Ofsted report ‘Learning: creative approaches that raise standards,’ shows how since the ending of KS3 tests schools have been able to exercise greater flexibility in the design of curricula to ‘extend opportunities for creative and interactive approaches to learning’. (Ofsted, 2010, p4)

Appendix 2 shows where creativity and critical thinking will be most relevant as part of the assessment of achievement against the teachers’ standards. Those standards are in bold italics where creativity and critical thinking can be part of the evidence of achievement. The responsibility lies with the trainee, therefore, to evidence explicitly the creative aspects of the lesson through annotations of the plan, to ensure that the
methodologies adopted are suitable and to make sure that the observer/assessor is appropriately briefed, and finally, to reflect in detail on the success of the lesson in terms of the creative methods used.

A very coherent and comprehensive guide to the practical issues of creativity in the classroom, along with planning resources designed for the teacher in training can be found on the ESCalate website by following the link to the Creativity in Initial Teacher Education (CITE) project. The final chapter of this book gives details of a variety of creative teaching methodologies along with a summary of the approaches and references for further research and resources, these approaches are tabulated in Appendix 1. Details of examples of practical teaching ideas using a range of creative teaching techniques and promoting of critical thinking can be found in a companion volume to this book ‘Global Learning and Sustainable Development’ (2011).

Key reading:

On the strategic issues of creativity in learning and teaching:

On language and dialogic classroom talk:

On practical approaches to creative learning in the classroom:
Useful websites

- http://escalate.ac.uk/resources The Higher Education Academy, Education Subject Centre advancing teacher education (ESCalate)

Bibliography

Craft, A. 2005 Creativity in Schools - Tensions and Dilemmas Routledge, Oxford
Halliday, M. A. K. 1993 Towards a language based theory of learning Linguistics in Education 5, 93-116


Robson, Patterson, Kidd, *Planning for Creativity in the Curriculum of Initial Teacher Education Programmes* MMU, TDA, 2009.


QCA Document?


**Government documents**


National Advisory Committee on Creative and Cultural Education. 1999 *All Our Futures: Creativity, Culture and Education,* The Robinson Report, London, HMSO.


**Web sites**

NGFL Scotland 2003 *Creativity in Education Online* at http:www.ltscotland.org.uk/creativity/. Accessed 8\textsuperscript{th} July 2011

The Higher Education Academy, Education Subject Centre advancing teacher education (ESCalate) http://escalate.ac.uk/resources accessed 15th December 2011.
Chapter 3

Barriers, enablers and practical approaches.

What are the current barriers to and enablers of creative learning and teaching?

What methodologies exist to help teachers develop a classroom in which the environment is conducive to creative learning and teaching?

How can creative learning be harnessed as a force for change?

The writers of this book, looking at creativity and critical thinking from a variety of viewpoints, have described a range of successful innovations and practices. We have seen how the creativity, vision and the intrinsic motivation of the teacher are powerful factors in this, but also that support must come from the ethos of the school if these ventures are to be successful. We have seen how wide the benefits can be to learners when creative methodologies are adopted by teachers who understand their power. It is hoped that teachers, in practice and in training, on reading these chapters will be inspired to see how they can become part of a movement that is based on a child centred sociocultural view of learning.

Barriers and Enablers

Embedded within our current education practices at school level and wider are factors that act as enablers of creativity and those that act as barriers. Consequently there are tensions and dilemmas that schools have to resolve if they are to be part of the movement towards the greater inclusion of creativity in the education that they provide.
The three principal barriers are: the use of competition as a driver of improvement, the attempted standardisation of learning and teaching through the National Curriculum and its associated strategies, and the use of stringent testing and assessment against externally imposed criteria (Sahlberg, P. 2010a). The effect of these measures has been shown to narrow the curriculum and the pedagogic choices available to teachers, to emphasise the worth of individual achievement above collaborative endeavour, and to generate a climate of reform, the rationale for which has been to provide schools with an edge to compete for finite resources rather than improve the learning (ibid).

Enablers of creativity have been seen to be: collaboration within and between schools, the development of cooperative learning in classrooms with the associated risk taking, and a culture of learning how to handle the possibility of being wrong (ibid). The benefits of collaboration and cooperation are many and to be seen at all levels and across all aspects of the work of the institution. The resultant environment of mutual respect allows for innovation involving risk taking, something that cannot happen without the presence of confidence and trust. For an institution to show that it values the sometimes uncertain process of creativity it has to reward good ideas and innovative solutions and not only the achievement of right answers.

Sahlberg discusses the paradox that exists in European education – that in order for the nations of Europe to compete more effectively on the knowledge based global stage our schools, teachers and learners need to compete less. He suggests that at all levels of the educational process more effectiveness would be achieved by the development of a greater level of cooperation and networking. ‘Co-operation and networking rather than competition and disconnectedness should therefore lead the education policies and development of education systems.’(Sahlberg, P. 2010b) That much practice throughout education in the UK seems currently frozen into the ground is a result of policies demanding uniformity of outcome, the use of a ‘state
theory of learning’ (Watkins, 2010) and compliance to external standards. The resultant individualisation of teacher’s work, the commoditization of education and the setting of school against school has done little to enhance the desire of institutions to cooperate.

Recent research in the UK has found a wide variation in the approaches of teachers to issues of creativity across the phases. The pattern of evidence found suggests that whilst creativity thrives in the lower key stages by the time key stage 3 and 4 are reached the pressure to conform to the assessment demands of the National Curriculum has narrowed the task opportunities offered. Teachers were seen to abandon those tasks which involved exploration and collaboration preferring to focus increasingly on those tasks that valued individual performance. It is suggested that this change of stance reflects the pressure of external assessment that becomes increasingly acute in the later stages. (Craft and Cremin et al, 2007).

Despite the implications of these findings there is a growing body of methodology rooted in the principles of creative, collaborative and cooperative learning to which schools are subscribing in varied measures. The report All Our Futures (2006) recognises the crucial role of education leaders in this and recommends that they should be supported in the establishment of an ‘organisational climate and framework for creativity.’ This is a recognition of the place of creativity as part of the ethos of a school and that creativity is something that should pervade all aspects of the work, this is ‘small c’ creativity which needs to infuse planning and teaching practices.

The Ofsted report of 2010 ‘Learning: creative approaches that raise standards’ although rather hemmed in by the PLTS agenda shows that across the 44 schools visited there was a great deal of creativity woven into the fabric of the curriculum enhancing, says the report, rather than a replacing the provision of the National Curriculum.
The report says that

‘In schools with good teaching, there is not a conflict between the National Curriculum, national standards in core subjects and creative approaches to learning.’ (p5)

and further,

‘Teachers were seen to promote creative learning most purposefully and effectively when encouraging pupils to question and challenge, make connections and see relationships, speculate, keep options open while pursuing a line of enquiry, and reflect critically on ideas, actions and results.’ (p5-6)

The report saw, unsurprisingly, that the following combination of factors when present in a school would provide the foundation for successful creative learning:

- well-organised cross-curricular links that allowed scope for independent enquiry
- inclusiveness, ensuring that it was accessible and relevant to all pupils
- a focus on experiential learning, with knowledge, understanding and skills developed through first-hand, practical experience and evaluation
- well-integrated use of technology
- effective preparation of pupils for the next stage of their learning, training or employment
- a broad and accessible enrichment programme
- clear and well-supported links with the local community and cultures, often drawing on local knowledge and experience to enhance pupils’ learning
- a flexible approach to timetabling to accommodate extended, whole-school or whole-year activities
- partnerships that extended pupils’ opportunities for creative learning.

(Ofsted, 2010, p8)
Elsewhere in this book, the writers look at the practical side of creative learning there are examples of practice that amplify the importance of some of the points above, namely: the benefits that come from timetable flexibility (chapter 5) enabling groups of learners to experience a different intensity of learning experience; the value to the learners of projects developing creative partnerships (chapters 4 and 6) where external agencies can be used to inject the excitement that comes from doing things in a different way and the benefits of ‘clear and well supported links with the local community and cultures’ (also chapter 4) where the active involvement of parents and families in whole-school and whole-year learning enriches the experience. Creativity is seen in the width, variety and value of such initiatives as schools endeavour to generate a ‘climate and framework for creativity.’

The ‘climate and framework for creativity’ can be seen in the public statements of schools that have embraced the idea of becoming one of the fifty five Thinking Schools in the UK or one of the fifty or so Schools of Creativity. Below are some examples of mission statements from these schools which show their ability to look at teaching and learning in an altogether more holistic way:

We aim to provide an environment in which your child feels stimulated and in which he/she will learn to become a more independent creative thinker with a lively and enquiring mind.

*An example from a primary school*

Learning may be defined as “a process of undergoing personal change” and as such the school recognises that it is what the learner thinks, says and does that creates the learning not what the teacher thinks, says and does.

*An example from a secondary school*
Creativity as a motivator of learning

The statements of intent above include the creation of an appropriate environment, recognition of the value of a learner-centred stance and an acknowledgement of the position of creativity in learning processes. The creation of the right environment with its physical, emotional and intellectual components is seen by many as being key to the development of intrinsic motivation in learners and teachers alike. Amabile (1998) looks at the factors that enhance intrinsic motivation and sees the value of an environment that contains the right level of challenge, freedom to choose how to solve a problem, having the right time and tools, these being underpinned by encouragement and support from both outside and within well structured working groups.

Motivation was also investigated by Dweck (1986) and across a range of learners striking differences were observed in the cognitive performance of those who were motivated by performance goals when compared with those whose motivation was in terms of learning goals. The strong orientation of the learners motivated by performance goals was towards the avoidance of risk and challenge which contrasted markedly with the more positive, enquiring attitudes of those motivated by learning goals. Those with learning goal motivation were much more effective in harnessing their abilities in the pursuit of the solutions to problems and they more readily initiated and engaged with activities that would promote intellectual growth, gaining more satisfaction from the process. The creation of a classroom ethos which encourages learning goals is therefore of great importance and this is what we see when we look at the range of methodologies that have been developed for use in schools.

Methodologies

It is useful at this point to look at the increasing number of very accessible and effective classroom techniques in terms of four broad and overlapping areas
• The strengthening of learning dispositions,
• the development of a community of enquiry,
• the use of thinking tools,
• methods of cognitive acceleration.

The importance of disposition

Building Learning Power devised by Guy Claxton and colleagues from the University of Bristol challenges teachers and learners to look at learning in terms of the dispositions of Resilience, Resourcefulness, Reflectiveness and Reciprocity and how these can be actively developed to enhance learning. Each of these dispositions is made up of a series of learning behaviours, ‘capacities’ as they are called by the authors and the underlying belief is that each of these can be developed by learners given the right opportunity. This is a school wide strategic approach that impacts not only on what happens in the classroom, but what the whole school says about learning and the vision for the preparation of learners for an uncertain future. (Claxton, G. 2011, p2)

‘A central concern of Building Learning Power is with enabling students to become more self aware as learners, to develop the habits of a successful learner, and to appreciate that they can continually improve those habits.’ (Gornel et al, 2005, p5). This work was built upon and developed in the ELLI (Effective Lifelong Learning Index) project. Both BLP and ELLI emphasize the need to create a language that can be used to articulate the importance of learning itself which learners and teachers can share in order to be successful. The authors of the ELLI project echo Harrington’s notion of the creative ecosystem when they talk about the ecology of learning and the need to balance the broad elements of value, attitude and disposition in the classroom in order to promote the development of the whole person. (Deakin Crick, 2006, p.2-3)
An example of a similar approach is ‘Habits of Mind’ devised by Art Costa & Bena Kallick. ‘A “Habit of Mind” means having a disposition toward behaving intelligently when confronted with problems, the answers to which are not immediately known.’ The proponents of HoM stress the importance of using pedagogic approaches that strike a balance between learners’ achievement of the necessary cognitive skills and their acquisition of life skills such as persistence, risk taking and metacognition.

Over the last ten years the Royal Society of Arts’ Opening Minds scheme has attracted over two hundred schools in the UK to a vision of a competence based model of learning and teaching. By focusing the learning around the five ‘key competences’ of Citizenship, Learning, Managing Information, Relating to people and Managing Situations they aim to be ‘reclaiming ownership of learning’ and making a coherent whole of the National Curriculum which they say is composed of a jigsaw of fragments that don’t really fit together. These five competences and their component subsections provide an unarguable and comprehensive list of the skills and attributes that are needed by learners who are going to be making their way in the 21st century world. The vision is of a school wide learning strategy expressly geared to providing a curriculum promoting of the development of the five competences above thus providing a solid foundation of skills that will be needed in key stage 4 and beyond.

Creating a community of enquiry

Philosophy for Children (P4C) and Mantle of the Expert (MoE) are approaches built on the idea of creating a community of enquiry. Devised by Matthew Lipman, Philosophy for Children ‘.. aims to encourage children and adults to think critically, caringly, creatively and collaboratively’. This method builds a ‘community of enquiry’ where participants create and enquire into their own questions, and ‘learn how to learn’ in the process (Sapere, 2010). Learners move, in a spirit of enquiry, beyond information to seek understanding thence to transforming reflection. If enquiry is
placed centre stage the classroom becomes the community of enquiry. Friendship
and cooperation are welcomed as positive contributions to the learning atmosphere
and replace the ‘semi-adversarial and competitive conditions’ that frequently exist
(Lipman, 2003, p94). When these conditions are achieved the aim of P4C is realised:
to improve the critical, the creative and the caring thinking of learners.

Rather than lessons, the proponents of P4C prefer to talk about ‘enquiries’ which
follow a set procedure allowing the community of enquiry to be formed and operate
effectively. The use of the word enquiry is important - it takes the focus from the
teacher and the dispensing of knowledge and places it with the words and thoughts
of the participants and the cooperative processes of making meaning and
understanding. The merits of questions generated by the learners in response to a
chosen stimulus are discussed before the key question is democratically decided
upon. The process of deciding which question to address is an important part of the
enquiry as it encourages active participation and allows learners to understand how
decisions can be made and how to listen to and take into account other points of
view.

Mantle of the Expert (MoE) was developed by Dorothy Heathcote and is ‘a drama-
inquiry approach to teaching and learning’ (Mantle of the Expert.com). Another
technique using the community of enquiry principle MoE can be powerful in many
areas of the curriculum. Groups of learners take on the role of experts - explorers,
archaeologists, escaping refugees, as they find solutions to problems and answers to
questions. Learners are able to take ownership of what is called the ‘enterprise’ as
they take on ‘the mantle of the expert’ and benefit from being able to see issues
through the eyes of others.
Thinking tools

The third type of methodology, which is very wide in scope, consists of a range of powerful techniques usually called thinking tools. Starting from the premise that creative thinking is a complex of skills that must be actively developed these widely available tactical classroom techniques involve the use of specific props and procedures to create problem solving opportunities for groups of learners across the age and ability range. As with any set of tools specific techniques have specific uses and the creative teacher will use the tool that is appropriate for a particular task bearing in mind the needs and aptitudes of the learners.

Edward de Bono’s Thinking Hats is one such technique (de Bono, 2000). Familiar to many are the liberating effects of this technique which has migrated over the years from business training into schools where it frequently takes its place in a teacher’s repertoire of creative methodologies. Learners take on problems and discuss solutions using the different characteristics and viewpoints represented by each different coloured hat. The key to the success of this method is the separation of the individual from the opinion, each hat representing a different way of looking at the issue in question giving an empowering effect that allows learners to think for themselves as big problems are broken down into more manageable chunks.

Associated with this is the CoRT (Cognitive Research Trust) material. The six sections of the CoRT Thinking Programme (CoRT for Schools) provide a detailed and structured approach to the explicit teaching of thinking skills emphasising de Bono’s assertion that learners’ capacities for ‘constructive thinking’ in real life need to be increased.

TASC (Thinking Actively in a Social Context), a ‘thinking-skills framework’ devised by Belle Wallace, is an example of a methodology that looks at the process of developing learners’ thinking in a collaborative eight stage process (TASC, 2010). It begins with gathering knowledge that learners already possess as they identify the problem and the questions that it poses. Ideas generated are selected, then
implemented. The processes of evaluating, communicating the ideas to someone else and reflecting on the experience complete the cycle. The core feature of this method is the staged process, the breaking down of a problem into manageable chunks by using the interrelated stages of the process which allows learners to move together from what they already know to the understanding of something new which is shown by their ability to articulate the new learning to others.

There are parallels between this method and another technique that takes learners through a staged thinking process. In using the LogoVisual Thinking (LVT) tools small groups of learners move through a cyclical core process that begins with focusing upon the problem, the task, expressed in an open ‘key question’. Then by gathering what is already known and putting responses to the key question in short sentences on repositionable shapes, thoughts can be arranged, grouped and rearranged as the discussion develops (Best, Blake and Varney, 2005). This technique has the ability to show new and sometimes unexpected and original relationships between thoughts and ideas as they are juxtaposed on the board in the organising phase of the process. This is followed by the final stage, that of the application of the new understandings in the response to the original challenge. The process allows the development of learners’ deeply valuable talk which facilitates the decision making process. The benefits of this method are several and include:

- The tactile and visual aspects of this tool are appreciated by many learners as is the physical flexibility that allows changes of mind to be seen and discussed as the shapes are arranged and rearranged based on the new thinking that emerges actively from the discussion. The thoughts can be permanent or they can be temporary.

- Learners can understand the importance of their own contributions as they see their thoughts in relation to those of others, they begin to appreciate the democracy of the process, the synergy of the whole and their part in that process.

- The board provides the medium to integrate thinking, bringing together into new patterns the diverse thoughts of the members of the group.
• The use of large boards means that groups can easily show, discuss and share their ideas with others within and beyond the working group.
• The visibility of the board allows teachers and other learners to see not only what the group is thinking, but how the group is thinking.

LVT is a powerful tool that has the capacity to promote the development of the skills of information processing, reasoning, enquiry, creative thinking and critical thinking.

**Accelerating the learning**

Mind Maps, devised by Tony Buzan (ThinkBuzan.com), is a technique that dates from the mid 1970s. It was the first of the ‘brain-based learning’ techniques which were informed by rapid developments in neuroscience and the understanding of how we learn. It continues to be a very influential and distinctively graphical technique used in schools to boost memory and accelerate learning. This technique enables learners to generate and organise ideas on paper the better to recall them and their relationships later; Mind mapping is beneficial for individual work but it is also effective when carried out by a group.

Philip Adey and Michael Shayer (1994) in their exploration of cognitive acceleration (Cognitive Acceleration through Science Education – CASE) sought to demonstrate a method of promoting learners’ thinking from concrete to abstract by means of a specific lesson structure. This was done by building on the constructivist idea that learners need to create meaning for themselves and do this best in the context of a working group.

The lesson consists of five parts:

1. An introduction which sets the scene (concrete preparation)
2. A puzzle or challenge which needs to be solved (cognitive conflict)
3. Group-work and discussion where pupils share ideas for solutions (social construction)
4. Explaining the thinking which gave the answer (metacognition)
5. Making links to everyday applications of the ideas discussed (bridging)

(ibid)

One of the key findings of this work was that the effect on the learners was that their performance improved not only in the science lessons, but also in English and maths, thus demonstrating the successful improvement of generic learning skills.

Methods based on an understanding of Howard Gardner’s multiple intelligences theory (1983) and the findings of cognitive science are also seen as accelerating learning. The term ‘Accelerated Learning’ was coined in 1985 by Colin Rose in his book of that title where he articulated the principles, values and advantages that underpin what was called ‘brain-based learning’. Other methods followed with Mapwise, (Oliver Caviglioli and Ian Harris), and Accelerated Learning (Alistair Smith). Both of these approaches have been influential in the way that learning is managed in many schools. In each of these approaches the understanding is that critical thinking processes are intertwined with factual knowledge, that ‘factual knowledge must precede skill’, (Willingham, 2009 p30) underlining the importance of infusing the two in the design and delivery of learning.

The emphasis in Accelerated Learning techniques is upon the physical readiness of the learners, their psychological readiness and the use of teaching techniques that will appeal to all preferred learning styles in the context of a highly structured four part sequence of challenging and engaging learning activities (Smith, 1998). Between these 10-15 minute lesson chunks are breaks of 1-2 minutes designed to allow learners to process what has just been taught. This structure with the use of selected music as a background is designed to be conducive to learning and deliver the optimum learning conditions.
Learning as a constructive, social process

As we look at each of these creative approaches two common factors emerge. Firstly, we see that there is the understanding that learning is a constructive and essentially social process; secondly, in the design and delivery of the learning the cognitive and the curricular objectives should be infused.

Success in the first of these depends on the deliberate creation of an environment in which learner collaboration is encouraged, this is a necessary precursor to the successful use of cooperative learning strategies. (Chapter 5 shows how this can be work practically in the context of y8 geography along with the planning, resourcing and operational implications). When suitable conditions are created learners are able to work together to maximise their own learning and that of others and in consequence interpersonal skills develop alongside cognitive skills. It has been shown that both collaborative and cooperative learning arrangements are highly effective in the promotion of thinking if a range of elements exist:

- Clearly perceived positive interdependence
- Face to face interaction
- Individual accountability
- The teaching of collaborative skills
- Group processing

(Johnson and Johnson, 1990)
Cooperative learning is dynamic and highly organised. When it is effective it is often characterised by the use of role play, it will have cognitive, metacognitive and social learning objectives and, significantly, a communication structure characterised by learners engaging ‘in extensive verbal negotiations with peers.’ (Jacobs, G. M., Lee, C, & Ng, M. 1997). Cooperative approaches such as Kagan Cooperative Learning (Kagan, 2009) emphasise continually the need to build up and maintain team spirit amongst group members and a high level of interconnectedness and awareness of the processes in which they are participating. The Jigsaw Cooperative Learning method (Jigsaw Learning, 2011) similarly emphasises positive interdependence and individual accountability, considered essential if a thinking environment is to be created. In this, as with other cooperative methods, Jigsaw learners need to be connected to the learning, communicating with each other and have an awareness of their roles and responsibilities within the group.

The second common factor is the infusion of cognitive objectives and learning objectives (see chapter 1). That is to say the learning processes are made explicit as learners are helped to discover how the engine works as well as where they are on the map, where their destination is and what route they need to take. The work done by Ennis (1997), McGuinness (2000), Marin and Halpern (2010) and others has lead to the conclusion that for learners of all ages and abilities leaving the development of social learning and interpersonal skills to chance is not an option, the necessary learning skills and their value have to be discussed as much as content issues. These are the life-long learning skills, the dispositions, the habits of mind, the creativity that underpins an individual’s ability to be successful.

**Endpiece**

The foregoing chapters have cast light on elements of the theoretical base of creativity and critical thinking and explored some of the possibilities that exist for the practical application of these concepts across a wide range of learning settings, from community conscious work in a KS2 setting, through the secondary phases and
on into teacher training. The factor that binds these chapters is the potential for enrichment seen in the practices described as a greater understanding of creative learning, creative thinking and critical thinking is achieved. These are complex concepts and teachers that appreciate their power and value are showing a fundamental and deep commitment to breaking the mould, to challenging the status quo, but above all they are showing their own creativity in their transactions in the classroom.

It is my belief that creativity and critical thinking should be seen in three ways:

- as closely related dynamic concepts,
- as being integral to our understanding of learning and teaching, and
- as being powerful drivers for change and improvements in teaching.

Closely related dynamic concepts:

Creativity and critical thinking have deep psychological, sociological and philosophical roots and an examination of these concepts can cause us to ask some searching questions about what teachers are and what teachers do. We see that they are related – they have a symbiotic relationship and to foster one is to promote the other. Further, we can see how the function and practice of teachers will be conditioned by the broader cultural context because neither creativity nor critical thinking is culture neutral and educational practices and policies inevitably reflect the values and aspirations of the culture in which they are situated.

Integral to the processes of learning:

We have seen that by thinking about creativity in the context of learning we focus on the very processes of learning itself and in so doing we examine what learners are actually doing in our classes and for what purpose. We note the empowerment to learn that comes from the use of collaborative and cooperative learning methodologies; we note also the importance of language, that most significant
cultural tool, not thinking of it just as the medium of learning, but as part of the learning mechanism itself. Given this understanding we need to reappraise the value and function of the language life of the classroom - the interchanges between teachers and learners and those between the learners themselves and understand what these say about their relative positions in a sociocultural view of learning. These factors profoundly influence the planning, the delivery and the organisation of learning. The writers of this book have all taken a fresh look at learning and teaching and the propagation of a language friendly learning environment has been an essential first step, seen as a prerequisite for the success of the learning because it is part of the process of learning.

The work described in chapter 5 shows two important visible benefits. There was the benefit to the learners gained by being able to work socially in a language rich learning environment and there was the benefit to the young teachers - they were able to see how their role changed and how the language dynamic changed. Having planned these episodes for learners with whom they were familiar the teachers were also able to see how much more responsive both the groups were than when constrained by the normal lesson arrangements.

**Drivers for change in teaching:**

In teaching creatively the attitudes and activities of classroom professionals demonstrate the acceptance of a set of values, articulated in chapter 1, which define the way their work is carried out and define the nature of the work space they inhabit. In creative teaching lies the seed of creative learning based on the idea of looking for possibilities in the co-constructed, co-owned joint endeavour. When teachers use their creativity an environment is generated where learners can ‘maintain and develop their own creative learning’ (Craft, 2005). This suggests a dynamic situation the detail of this will change from phase to phase but the principles hold good for all, as so does the practitioner’s need to know that their approaches are supported by colleagues and contribute to the shared ethos of the school.
In chapter 4 we see the impact of thinking about learning and teaching in a creative way on the scope and vision of the Keeping Warm and Bad Word projects. By looking beyond the school gates and in to the community the depth and value of the work was enhanced, the whole school became involved and cooperative working became the norm - all of the school community gained lasting benefit from this work. Some of this has been in terms of lasting changes in the shared view of learning and teaching which is manifested in the development of methodologies incorporating the ideas that came from taking part in the Creative Partnership projects.

That change is necessary in the management of education is clear and the current model of learning and teaching in many ways is not fit for purpose. In Claxton’s words we need to make our schools more like learning gymnasia rather than the old assembly line and monastery models that are still frequently to be found (Claxton, G. 2008). They need to be places ‘where children go to have their ‘learning stamina’ developed and their ‘learning muscles’ stretched’ (ibid p127). And this, he says, not simply to pass exams ‘but so they can be confident, capable, powerful learners for the rest of their lives.’(ibid). The micro-management of the processes of learning produces institutions that compete with one another, some more effectively than others, it does not encourage the development of those personal skills that learners need if they are to be well informed and well motivated citizens.

Schools that talk about ‘shaping the future through creative learning’ are those that have taken a long look at the way the processes of learning and teaching are perceived. Those schools that refer to their charges as ‘learning partners’ have also examined the change in the teacher/learner relationship that develops when the implications of creative learning and teaching are put into practice. These are the institutions that have realised that 19th century methods are not those that will adequately prepare learners for life in the 21st century and despite the very real pressure to conform these schools are overcoming the barriers to creative learning and some, supported by such organisations as the RSA, (the Royal Society for the
Encouragement of Arts, Manufactures and Commerce), are adopting competence based approaches capable of addressing a different way of looking at learning. There are Schools of Creativity where homework becomes an Independent Learning Programme, an integral part of a KS3 curriculum which also includes problem based learning tasks with the stated intention of promoting independent learning and developing problem solving and communication skills across the curriculum.

In schools such as these the need to value and facilitate the development of the processes of learning as well as the products is recognised as is the need to develop learning and teaching models that promote in learners the ability to reflect and develop a sense of self. In schools such as these the reforms that have taken place over time are systemic, not cosmetic and are to do with how effective the schools can be in achieving their primary pursuit. Returning to Arnowitz (1998) we remind ourselves that ‘the active knower, not the mind as a repository of “information”, is the goal of education.’

Points for discussion

• How can school managers overcome the barriers and develop a school’s ethos based on the principles of creative learning and teaching to better educate the citizens of the 21st century?

• How can curriculum managers support departmental teams in their understanding, competence and confidence in using a range of creative teaching methodologies.

• How can class teachers be supported in their creation of a learning environment in the classroom where the power of creative learning can be understood and shared with learners?
Bibliography


Claxton, G. Chambers, M. Powell, G. & Lucas, B. 2011 The Learning Powered School, Bristol: TLO


Watkins, C., 2010. Learning, Performance and Improvement. INSI Research Matters, No 34, Summer 2010

**Government documents**
National Advisory Committee on Creative and Cultural Education. 1999 *All Our Futures: Creativity, Culture and Education*, The Robinson Report, London: HMSO.
Ofsted, 2010 *Learning: creative approaches that raise standards* Manchester: Ofsted, 2010

**Websites**
Creative Partnerships http://www.creative-partnerships.com/about/schools-of-creativity/
De Bono Foundation: http://www.debonofoundation.co.uk/cort1.html accessed 28th November 2011
Philosophy for Children: http://www.sapere.org.uk/ accessed 22nd September 2011
Thinking Actively in a Social Context (TASC), http://www.tascwheel.com/ accessed 22nd September 2011
ThinkBuzan.com http://www.thinkbuzan.com/uk/ accessed 27th December 2011
### Appendix 1 - Creative learning and teaching

#### Key References and Sources

| Competence based curriculum | Opening Minds | Developed by the RSA  
|-----------------------------|--------------|---------------------------------------------------------------|
| Disposition                 | Habits Of Mind | Art Costa and Bena Kallick  
|                             |              | http://www.habitsofmind.co.uk/                               |
|                             | Building Learning Power | Gornall, S, Chambers, M and Claxton, G.  
|                             |              | Building Learning Power in Action, TLO, Bristol, 2005       |
|                             |              | Claxton, G, Chambers, M, Powell, G & Lucas, B The Learning Powered School, TLO, Bristol, 2011 |
|                             | Learning Power in Practice – the ELLI project | Deakin Crick, R. Learning Power in Practice  
|                             |              | Paul Chapman, London, 2006                                   |
|                             |              | http://sapere.org.uk/                                        |
|                             | Mantle of the Expert (MOE) | Dorothy Heathcote, Brian Edmiston and others  
|                             |              | http://www.mantleoftheexpert.com/                            |
|                             |              | http://www.teachingexpertise.com/publications/thinking-through-school-1220 |
| Thinking Tools              | LogoVisual Thinking | Anthony Blake and John Varney  
|                             |              | http://www.logovisual.com/                                   |
|                             | The TASC wheel (Thinking Actively in Social Contexts) | Belle Wallace  
|                             |              | http://www.tascwheel.com/                                    |
|                             | Thinking Hats | Edward De Bono Foundation  
|                             |              | http://debonoforschools.com/asp/six_hats.asp                 |
|                             | Cognitive Research Trust (CoRT1,2,3,4,5 & 6) | Edward De Bono Foundation  
|                             |              | http://www.debonofoundation.co.uk/whycort.html               |
|                             | Thinking Maps | David Hyerle and Chris Yeager  
|                             |              | http://www.thinkingmaps.com/                                 |
|                             | Mind Maps | Tony Buzan  
|                             |              | http://www.thinkbuzan.com/                                  |
|                             |              | and many readily available books                             |
| Accelerated Learning        | Accelerated Learning and ALPS | Alistair Smith  
|                             |              | http://www.acceleratedlearning.co.uk/                         |
|                             | Cognitive Acceleration in Science Education (CASE) | Philip Adey and Michael Shayer  
|                             | Mapwise | Oliver Caviglioli and Ian Harris  
|                             |              | Accelerated Learning Through Visible Thinking, Continuum, 2000 |
| Other sources              | Jig Saw Cooperative Classroom | Elliot Aronson  
|                             |              | http://www.jigsaw.org/                                      |
|                             | The Thinking Classroom | Mike Fleetham  
|                             |              | http://www.thinkingclassroom.co.uk/                          |
|                             | Socratic Dialogue | Various sources  
**Appendix 2 - Evidencing creativity in teaching.**

<table>
<thead>
<tr>
<th>Standards for Teachers</th>
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<tbody>
<tr>
<td><strong>1 Set high expectations which inspire, motivate and challenge pupils</strong></td>
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<tr>
<td>• establish a safe and stimulating environment for pupils, rooted in mutual respect</td>
</tr>
<tr>
<td>• set goals that stretch and challenge pupils of all backgrounds, abilities and dispositions</td>
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<tr>
<td>• demonstrate consistently the positive attitudes, values and behaviour which are expected of pupils</td>
</tr>
<tr>
<td><strong>2 Promote good progress and outcomes by pupils</strong></td>
</tr>
<tr>
<td>• Be accountable for pupils’ attainment, progress and outcomes</td>
</tr>
<tr>
<td>• plan teaching to build on pupils’ capabilities and prior knowledge</td>
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<tr>
<td>• guide pupils to reflect on the progress they have made and their emerging needs</td>
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<tr>
<td>• demonstrate knowledge and understanding of how pupils learn and how this impacts on teaching</td>
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<tr>
<td>• encourage pupils to take a responsible and conscientious attitude to their own work and study.</td>
</tr>
<tr>
<td><strong>3 Demonstrate good subject and curriculum knowledge</strong></td>
</tr>
<tr>
<td>• have a secure knowledge of the relevant subject(s) and curriculum areas, foster and maintain pupils’ interest in the subject, and address misunderstandings</td>
</tr>
<tr>
<td>• demonstrate a critical understanding of developments in the subject and curriculum areas, and promote the value of scholarship</td>
</tr>
<tr>
<td>• demonstrate an understanding of and take responsibility for promoting high standards of literacy, articulacy and the correct use of standard English, whatever the teacher’s specialist subject</td>
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<tr>
<td>• if teaching early reading, demonstrate a clear understanding of systematic synthetic phonics</td>
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<tr>
<td>• if teaching early mathematics, demonstrate a clear understanding of appropriate teaching strategies.</td>
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<tr>
<td><strong>4 Plan and teach well structured lessons</strong></td>
</tr>
<tr>
<td>• impart knowledge and develop understanding through effective use of lesson time</td>
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<tr>
<td>• promote a love of learning and children’s intellectual curiosity</td>
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<tr>
<td>• set homework and plan other out-of-class activities to consolidate and extend the knowledge and understanding pupils have acquired</td>
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<tr>
<td>• reflect systematically on the effectiveness of lessons and approaches to teaching</td>
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<tr>
<td>• contribute to the design and provision of an engaging curriculum within the relevant subject area(s).</td>
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<tr>
<td><strong>5 Adapt teaching to respond to the strengths and needs of all pupils</strong></td>
</tr>
<tr>
<td>• know when and how to differentiate appropriately, using approaches which enable pupils to be taught effectively</td>
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<tr>
<td>• have a secure understanding of how a range of factors can inhibit pupils’ ability to learn, and how best to overcome these</td>
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<tr>
<td>• demonstrate an awareness of the physical, social and intellectual development of children, and know how to adapt teaching to support pupils’ education at different stages of development</td>
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<tr>
<td>• have a clear understanding of the needs of all pupils, including those with special educational needs; those of high ability; those with English as an additional language; those with disabilities; and be able to use and evaluate distinctive teaching approaches to engage and support them.</td>
</tr>
<tr>
<td><strong>6 Make accurate and productive use of assessment</strong></td>
</tr>
<tr>
<td>• know and understand how to assess the relevant subject and curriculum areas, including statutory assessment requirements</td>
</tr>
<tr>
<td>• make use of formative and summative assessment to secure pupils’ progress</td>
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<tr>
<td>• use relevant data to monitor progress, set targets, and plan subsequent lessons</td>
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<tr>
<td>• give pupils regular feedback, both orally and through accurate marking, and encourage pupils to respond to the feedback.</td>
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<tr>
<td><strong>7 Manage behaviour effectively to ensure a good and safe learning environment</strong></td>
</tr>
<tr>
<td>• have clear rules and routines for behaviour in classrooms, and take responsibility for promoting good and courteous behaviour both in classrooms and around the school, in accordance with the school’s behaviour policy</td>
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<tr>
<td>• have high expectations of behaviour, and establish a framework for discipline with a range of strategies, using praise, sanctions and rewards consistently and fairly</td>
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<tr>
<td>• manage classes effectively, using approaches which are appropriate to pupils’ needs in order to involve and motivate them</td>
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<tr>
<td>• maintain good relationships with pupils, exercise appropriate authority, and act decisively when necessary.</td>
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<tr>
<td><strong>8 Fulfil wider professional responsibilities</strong></td>
</tr>
<tr>
<td>• make a positive contribution to the wider life and ethos of the school</td>
</tr>
<tr>
<td>• develop effective professional relationships with colleagues, knowing how and when to draw on advice and specialist support</td>
</tr>
<tr>
<td>• deploy support staff effectively</td>
</tr>
<tr>
<td>• take responsibility for improving teaching through appropriate professional development, responding to advice and feedback from colleagues</td>
</tr>
<tr>
<td>• communicate effectively with parents with regard to pupils’ achievements and well-being.</td>
</tr>
</tbody>
</table>

(Teachers’ Standards, Department for Education, 2011)