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Learning outcomes

By reading this chapter, you will have:

- Explored the concepts of creative thinking, teaching and integration
- Understood the differences between critical thinking and creative thinking
- Explored the concepts of creative teaching and teaching for creativity
- Explored some teaching approaches that facilitate these aspects of creativity

Chapter overview

The Introduction makes a case for creativity, drawing attention to some definitions and also to the three key elements of creativity in the title of this chapter. This chapter explores the concepts of creative thinking, teaching and integration in more depth and connects to definitions of creativity. Drawing on seminal work from leading writers on creative thinking, this chapter will explore different models of creative thinking, techniques and possible applications linked to inclusive pedagogy and its benefits for



children. The chapter will outline some of the differences between critical thinking and creative thinking and suggest that, although much of how we teach encourages critical thinking, it does not do the same for creative thinking. This chapter will also look to 'myth-bust' creative teaching and explore teaching for creativity as well as presenting models for the integration of subjects, primarily drawing on the work of Robin J. Fogarty. There will also be connections made between the concepts and application of classroom approaches, outlining some different techniques and ideas. The concepts in this chapter are then exemplified by primary English teaching throughout the rest of the book.

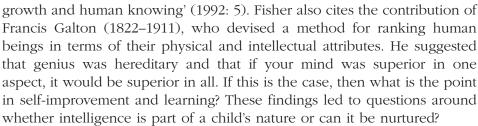
Creative thinking: the concept of thinking

First, it is important to say that creative thinking and critical thinking are both equally as important. Fisher (1992) states that the concept of thinking is derived from the disciplines of philosophy and psychology. Philosophy is more concerned with the study of critical thinking, relying on and putting forward the merits of analysis and argument and applying logic to situations, whereas Cognitive Psychology (the study of mental processes and the role they play in how people think, feel and behave) gives more emphases to creative thinking and how ideas are formed in the mind. Thinking involves both these aspects. We cannot make sense of the world unless we think, unless we apply logic to situations, unless we analyse situations. But we cannot pursue ideas, we cannot create new things, we cannot have new ideas unless we allow and imagine them to be formed in our minds. Our thinking, however, is not something that we do in a vacuum. Despite the fact that we may often think by ourselves, I usually do a lot of thinking whilst cycling to and from work, Fisher would argue that our thinking is 'mediated by others' (1992: 4). He goes on to suggest that thinking takes place within a social context; it is shaped by the culture we are operating in and the environment in which we find ourselves.

These are not the only disciplines that facilitate the study of thinking. Our understanding of neuroscience has massively increased over the last decade and our knowledge of how the brain works on a physiological level and what it can do is significantly advanced. Humans have been fascinated by the brain for a long time, however. Phrenology, an aspect of science that focuses on measuring parts of the skull, linking to the brain having separate areas and functions, was a popular hobby during the latter part of the nineteenth century. This led to the search for general laws about how the mind works, looking for universal patterns in, as Fisher states, 'cognitive







I have just made a connection above between intelligence and the ability to think – which I must confess has significant limitations. The measure of both is very important. Craft (2000) cites the work of Hudson (1973), who made the suggestion that children who excel in disciplines that look for one right answer also do well in traditional IQ tests. In other words, these children are good at convergent thinking. So, the text that measured intelligence actually measured the ability to find the correct answer. Drawing again on Hudson (1973), Craft (2000) goes on to suggest that children who are good at thinking divergently, tend to excel in the arts-based disciplines. Taking this line of thinking to its conclusion could lead us to arrive at the misconception that thinking divergently is creative and therefore applies to the arts and thinking convergently is not creative and applies to science-led disciplines. However, I want to make very clear that this is a huge misconception, certainly in terms of thinking. Guilford (1967) brought to light the distinction between different types of thinking: convergent, being about looking for the one right answer; and divergent, looking for a myriad of possible answers. These apply to any area and any discipline and should not be pigeonholed in this way. Thinking transcends subject disciplines. I also want to make very clear that I am not suggesting that divergent thinking is in any way better than convergent thinking, it is, however, more creative. Craft states: 'possibility thinking, which is the basis of creativity, is involved in both convergent and divergent thinking' (2000: 7).

Possibility thinking

Possibility thinking is an aspect of divergent thinking. So, what is meant by possibility thinking? Craft puts it 'at the heart of all creativity in young children' (2007: 1) and it is all about generating lots of possibilities. Guilford (1967) asked how many uses could be found for a pen; Craft would suggest that possibility thinking is about going even further and asking 'what if' questions. What if the pen was the size of a house and made of foam? What if it was made of wood and the size of a woodlouse? What if it was rolled out to make a flat surface? How many uses could be found for the pen?





The case study below explores possibility thinking in action in a Year 4 class looking at forces. Note how Josh, the class teacher, encourages his class to suggest and try out different possibilities. Where does the learning take place?

Case study

Josh, a Year 4 teacher, was teaching a unit of work on forces. He was focusing on friction and air resistance. Many of Josh's class were interested in Formula 1 motor racing, so Josh decided to turn his classroom into a Formula 1 pit lane garage as a means of stimulating interest. Josh's challenge to his class was clear. He asked them to design and build a car that would be able to go as far as possible unaided from a downhill ramp start. Josh discussed with his class how they would go forward with this. For Josh, the main focus was learning about friction and air resistance, not about creating a beautifully neat car to show to parents. He was hoping for experimentation and a range of ideas, and that is what he got.

As the project developed, Josh observed a lot of discussion around the car's weight and shape and that more weight would provide more downward force. These were children whom Josh would not have expected to be discussing this kind of complexity. Children were suggesting alternative materials, alternative aerodynamic designs, different widths, lengths, shapes and wheel sizes. What would the children do, however, if something didn't work? Although this hadn't really been planned, Josh found that, in the main, the children worked collaboratively quite effectively and sought support from each other. Billy would help Hannah to alter something to help her car go faster. Mel would ask Michael for help when she didn't know why her car got stuck at the bottom of the ramp. The evaluation of the cars was taking place during the design process - those complex skills of refining and evaluating were happening naturally.

Reflecting on the case study

- How did Josh facilitate possibility thinking?
- What are some of the challenges of Josh's approach? Was there any scaffolding?
- What type of work had gone before for Josh's class to respond as they did?
- What did the children learn, and during which aspects of the project did it take place?
- What will you take from this case study?







Craft states that: 'Possibility thinking, then, essentially involves a transition in understanding; in other words, the shift from "What is this?" to exploration - i.e. "What can I/we do with this?" Fostering possibility in children involves enabling children to find and refine problems as well as to solve them' (2007: 2). It would have been easy for Josh to have provided some aerodynamic cutouts for the children to fold, wood and wheels cut to the right lengths and a neat presentation to show the children how to make the best car. But, where would the learning have been? Possibility thinking for Josh was about the children working out what to do with the problem and then uncovering any issues and dealing with them as the process unfolded. This is helping children develop lifelong skills as well as the enjoyment of practical Science and Design Technology. Of course, there are more effective aerodynamic car designs and materials, but the focus for Josh was not on his class finding the right answer, but on developing, exploring, challenging and creating many possibilities in order to develop their understanding of two important scientific concepts.

Creative teaching

Having read the previous section, it would therefore follow that creative teaching is teaching that facilitates and promotes possibility thinking. Absolutely, but it is much more than that. Joubert (cited in Craft et al., 2001), states that creative teaching is an art. There is no manual, procedure or set of routines that one can use to teach someone else to be a creative teacher. The NACCCE's *All our Futures* defines creative teaching as: 'teachers using imaginative approaches to make learning more interesting, exciting and effective' (1999: 89). Joubert (cited in Craft et al., 2001) goes on to comment that creative teachers are constantly reinventing themselves and their approaches, adapting their teaching styles, resources and strategies to the different contexts in which they find themselves. Craft and Jeffrey (2004) cite the work of Woods (1990), who suggests some characteristics of a creative teacher to be: innovation, ownership, control and relevance.

However, what *All our Futures* (NACCCE, 1999) does – also developed by Craft, Jeffrey and Liebling (2001) and Craft and Jeffrey (2004) is to create a distinction between teaching creatively and teaching for creativity – teaching creatively being ostensibly to do with the teacher, and teaching for creativity being more concerned with the way in which creative teaching develops children's and young people's thinking and behaviour. Joubert (cited in Craft et al., 2001) goes on to explore NACCCE's (1999) three principles of teaching for creativity: encouraging, identifying and fostering. I would encourage a read of Joubert's chapter as it explores these principles very effectively.





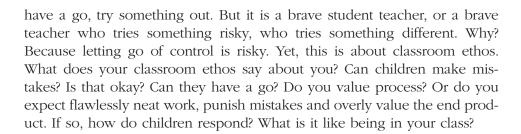


To summarise, Joubert explains that teachers should encourage children to believe in their creative selves and engage their minds in having a go; in turn, developing children's confidence that they might explore possibility thinking in an education system that is essentially convergent in terms of how intelligence and success is measured. Joubert states that teachers should be identifying children's talents and creative abilities, rather than leading them down narrow career paths and fostering creativity. Learning is a process of discovery and often occurs through exploration and that wonderful moment where a connection is made and we finally 'get it'. Teachers should encourage children to experiment, play and discover. Children should, as Joubert says, 'Innovate not merely imitate' (2001: 25).

What is a creative teacher?

Woods (1990) has suggested some response to this, as we have previously considered. But, what comes into your mind? As a student teacher in the early to mid-1990s, I was heavily influenced by John Keating from Dead Poets Society (1989) played by the wonderful Robin Williams. Keating was different, he displayed charisma, he ripped up the textbook (quite literally), he had boys standing on tables, performing poetry, he enthused his class; his classes were fascinating and slightly unpredictable. Could these be characteristics of a creative teacher? The characteristics which Torrance (1965) came up with are: curiosity, independence, intuition, idealism and risk-taking. Cremin (2015) develops this theme by discussing the pedagogic practice of creative teachers. She draws on previous research by Abbs (2002) and Woods and Jeffrey (1996), who state that: 'Creative teachers' pedagogic practice is seen to be most effective when they help children find relevance in their work either through practical application or by making emotional or personal connections' (Cremin, 2015: 36). In order to do this, teachers need to ask questions, they need to know their children and they need to be able to stand back from their position as teacher and notice what is happening around them. How are the children responding? Are the children responding? Teachers should avoid playing 'guess what's in my head' when asking questions but use open questions that allow children to think, have their say and also express themselves. They should use possibility thinking, which is about meeting the child in their understanding of the world and guiding them to further thinking and development. This is a risky business and not for the faint-hearted. As I observe student teachers, I see many 'safe' lessons where, because they fear things going 'wrong', the lessons are over-planned, predictable, over-scaffolded, almost programmed for a clean and sterile view of perfection. I understand why this happens but I urge student teachers to





Teaching for creativity

It does not sit well with me to delineate between teaching creatively and teaching for creativity because the lines are very blurred. But, to reiterate the NACCCE's (1999) distinction from earlier in this chapter: teaching creatively is primarily concerned with the teacher themselves, and teaching for creatively is concerned with how the teaching fosters children's creativity. In order to practically explore fostering creativity, let's return to our case study earlier in the chapter of Josh and his science project on forces.

Josh set up a simulation of a Formula 1 pit lane garage. He did this by bringing in some old tyres, posters of drivers and tools and he wore overalls. He also encouraged the children to bring in and wear any Formula 1 clothing they had. Cowley suggests that simulations are a 'powerful way of harnessing creativity' (2005: 93). Simulations replicate real-life scenarios, providing context and concrete experience for children. Primary classrooms have utilised role play in many contexts for many years and simulations are essentially an extension of these. Not only is Josh being creative here, but the simulation can stimulate questioning, creative thinking and a wider response to the subject, in this case forces. In 'Curriculum Approaches' (Copping, 2012), I present a case study that illustrates this very point. The simulation is to contextualise Alfred Noyes' classic poem 'The Highwayman' and the teacher creates a simulation of a murder scene in the classroom, with atmospheric lighting, music and images. The children in this case study respond with a massive variety of questions and comments, where they are exploring and discussing the myriad of possibilities around what has happened or what could have happened. Teaching creatively can stimulate creativity. In fact, you cannot teach for creativity unless you are teaching creatively.

Josh was also taking part as a learner within his classroom (Cremin, 2015). He was taking a risk, he didn't really know how it would turn out but he knew he wanted to work with the children and help facilitate their thinking. In so doing, he was quite prepared to learn himself. However, one important point to note is that Josh perceived his children as creative thinkers. His view of himself as a teacher and of his children as learners was



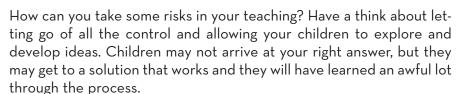




fundamental to the whole idea. Josh saw himself as a learner and a facilitator, a coach almost. He didn't see himself as the all-powerful fount of all knowledge. He didn't put that much pressure on himself. For Josh, his classroom was the children's classroom, too. He viewed the children, not as empty vessels to be filled with knowledge or wild lions needing to be tamed; he viewed his children as active participants in their learning, who had something to contribute to the learning process. In so doing, as Cremin states, Josh left 'space for uncertainty and the unknown and showed considerable creative assurance in building on unexpected contributions or enquiries, fostering the autonomy of learners in the process' (2015: 40).

Seeing this case study through the lenses of 'teaching creatively' and 'teaching for creativity' demonstrates how interlinked they are. Josh would not have had the questioning, exploratory journey of discovery responses to the project had he not taken a risk and taught creatively. His open questions facilitated the discussions. However, these are not just techniques or tips that Josh has picked up in his career; this approach comes from the type of teacher Josh is and his view of what learning and teaching is. This leads to the ethos he creates in his classroom which drives the pedagogic approaches he uses.

Stop and think



Creative integration

I have already stated that the pedagogic practice of creative teachers is about creating relevance and understanding and making connections. I would add that creative practice is also about developing children's conceptual understanding of whatever is being studied. Cowley writes in praise of topic work, which she states: 'offers a way of capitalising on the natural links and connections between various subjects' (2005: 86). Let's be clear, this section is not a treatise suggesting that everything should be integrated and that the only way to be creative is to use topic work. What I am doing is exploring the ways in which curriculum areas can be integrated in order to help make learning more cohesive where it works. It might be







interesting to encourage children to consider learning from one subject area, let's say English and non-fiction, and apply it to another (see Figure 1.1). All statements in Figure 1.1 are taken from National Curriculum 2014 Key Stages 1 and 2. This figure illustrates that many non-fiction skills demanded by the National Curriculum are essential to developing learning in history. There is scope for these connections to be made and then taught together as it will make a much more cohesive and purposeful learning experience for the children. It makes much more sense to combine English and history in this context to investigate some sources or interpretations of Queen Elizabeth I, rather than doing an hour of non-fiction English work on, for example, non-chronological reports about tractors in the morning then for history in the afternoon, exploring sources about Elizabeth I. Whilst I agree that there could be a case of teach, practice in English and then apply in history, that does indicate some joined-up thinking. However, where concepts and skills can be aligned, then let's do it because it will make learning more cohesive for the children and they will get a greater sense of understanding and purpose to what they are doing.

In 'Curriculum Approaches' (Copping, 2012), I give some examples, drawing on the work of Fogarty of models of curriculum integration, and Figure 1.1 is a further example of her 'Shared' model. Fogarty and Pete (2009) state that: 'by coupling similar disciplines, the overlap facilitates deep learning of concepts

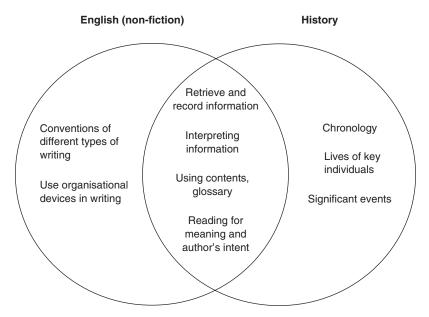


Figure 1.1 Skills distinct between and common to both subjects of English (non-fiction) and History





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for transfer' (2009: 58). In other words, making connections between skills within two subject disciplines facilitates deep learning.

Why is integrating curriculum areas an integral part of creativity?

The main reason is one I have mentioned before but I do want to unpack it further, and that is making connections. Fogarty says that: 'the brain is a pattern-seeking mechanism and is constantly and continually searching for connections that make sense' (2002: 160). In order to facilitate this, children need to be active in their own learning and they are more likely to be active if they can see a purpose to it and are engaged in it. One way to do this is by giving the learning a context, and a meaningful cross-curricular approach can do that.

This is all about relationships. In the above example, I explored the relationship between elements of two subject disciplines and the notion of relationship is important. Craft (2000) describes a teacher being in a relationship with the subject they are teaching and that creativity is about the dynamic interaction between the teacher, their subject and the values they hold.

In the following case study, this relationship between teachers, curriculum and values for the purpose of context-embedded learning is explored.

Case study

As part of one of their Masters-level modules, PGCE primary student teachers at the University of Cumbria devise, plan and facilitate a creativity week. Throughout this week, student teachers work in teams in primary classes and their task is to run a theme week. As part of that week, students have to teach children to think creatively and to teach creatively themselves as well as teach for creativity and also integrate subject areas creatively. As Elton-Chalcraft and Mills state: 'Children are given opportunities to take more ownership of the learning outcomes through carefully constructed approaches developing their creative thinking (Heilman, 2005). Students are offered a "safe" environment to "take risks" with their teaching and the children's learning' (2013: 2). This case study focuses on a group of student teachers who were facilitating a science week. Each year group team had taken an area of science in which they had experience and planned accordingly. One year group had taken the theme of chemical reactions and had set up a simulation around J.K. Rowling's creation of Hogwarts.







The children had been sorted into groups using a 'sorting hat' and were then ready for a programme of learning that incorporated a lot of high-level science, English and design technology. The classroom had been transformed to look like one from Hogwarts, with cobwebs and 'traditional desks' and one student teacher was performing the role of a 'Rowlingesque' potions teacher quite beautifully. The students had woven the skills from all three disciplines together to create a cohesive and enjoyable collaborative learning experience for the children. Children were experimenting with different powders and chemicals (full health and safety check completed) to discover the effects of mixing certain substances. They were also making an explosion-proof container with which to carry the potions across the playground and then devising a purpose for the potion as part of a task for the 'Hogwarts Apprentice'.

The children were developing skills of negotiation, collaboration and discussion, and also a lot of possibility thinking through 'what would happen if ...' questions, whilst engaging in some high-level science and some resistant materials work in design technology: manipulating materials, understanding properties of materials and using knowledge and understanding to combine various materials together. The skills of marketing their product through persuasive language and market research were developed. The key to its success was that the student teachers had thought very carefully about blending the skills from each subject discipline and which concepts would work effectively with each other. There was nothing random or lucky about how it worked. The connections made and the relationships between all areas made for success.

Reflecting on the case study

- How have you integrated subjects and work in a cross-curricular way? What were the effects?
- What makes for effective curriculum integration?
- What did you notice about how creative thinking, teaching and integration work together?
- What will you take away from this case study?

Elton-Chalcraft and Mills, along with myself and other colleagues from the University of Cumbria, have more recently been engaged in research looking at the impact of creative approaches on children's learning in similar







creative themed weeks. The findings of this iteration of the research support the former. The student's approach of exploration, possibility thinking and finding creative connections between subjects facilitated the children to enjoy learning and also have some ownership as they could make decisions around what they did, leading to their delight in exploration and a desire to persevere. Creativity can also facilitate learning resilience. Elton-Chalcraft and Mills state in their findings that:

teachers, student teachers and children ... mentioned the concept of fun or enjoyment and linked this with liberation and time/space to discover. One child said: 'I felt free every day.' This was mentioned in some form or another by several children. (2013: 8)

Try this



Activity 1: Possibility thinking

When you are planning your next piece of teaching, try taking a risk. Ask some open questions that allow for a variety of responses, there may not even be a right answer. If you are not sure, why not ask the children something like: 'What would happen if the sea had no waves?' 'What would it be like if there was no such thing as concrete?' 'Would we still need aeroplanes if we could fly ourselves?' See what responses you get.

Activity 2: Simulation

When you are next planning a unit of work, see if there is a real-life context that you can create in order to engage the children in their learning. For example, if you are studying the Vikings, why not come dressed as one, set up the classroom like a Viking longship or even create what looks like the remains of a fire in the centre of the classroom like a Viking longhouse. It will be fun and engaging and you will enjoy it as much as the children.

Activity 3: Shared integration

When planning, use my example in Figure 1.1 in this chapter. Take two subject areas that you are teaching and do a Venn diagram of some of the skills, knowledge and understanding that are separate from each other and then common to both. Think through how you can teach the common skills, knowledge and understanding together. Try it and evaluate the children's learning as a result.







Summary

Creative thinking is at the heart of creativity. The concept is not really to do with any subject discipline or any particular type of person, creativity is to do with how we think. Pedagogically, it is to do with how we facilitate thought and elicit information. Do we ask children to guess what is inside our head, or do we ask them open questions that could have a myriad of possible responses because we want them to think, to have a go and to develop their understanding of the world? This in turn arises out of who we are as teachers and the ethos we create in our classrooms. It all stems from the crucial question: 'What kind of a teacher do you want to be?' or 'What kind of teacher are you?' Responses to this question drive our teaching approaches. Will we teach creatively by taking some risks and handing over control to our learners? Will we look for imaginative and innovative ways to engage our learners so as to create that joy in learning not just for them but also for us? Out of that desire to give up control and the desire to engage learners comes the desire to foster creativity. Will we be teachers who empower, encourage and develop our children to take more ownership of their learning, to be actively involved, be participants rather than spectators? Finally, as we look to embrace our relationship with the curriculum, how will we respond? We need to be looking for opportunities to make connections between subjects, to encourage children to see how some skills, concepts and understanding can transcend those subject borders whilst others stay firmly rooted within. How will we go about helping our children make learning more real, relevant and contextual?

In the context of the subject of English, my aim for the rest of this book is to do just that. The chapters that follow will explore these creative concepts in the context of English and look at making learning in primary English meaningful, fun, enjoyable and creative.

Further reading

Craft, A., Jeffrey, B. and Liebling, M. (eds) (2001) *Creativity in Education*. London: Continuum.

This text provides a great overview of the concepts explored in Chapter 1. Joubert's chapter on 'The Art of Creative Teaching', is one I have used a lot in this chapter, and all of it is very well written.

Fogarty, R.J. and Pete, B. (2009) *How to Integrate the Curricula*, 3rd edn. Thousand Oaks, CA: Corwin.

This great text explores 10 different ways of integrating the curricula and of exploring advantages and disadvantages of each and gives practical examples of how to use each model and when.





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