



# Creative leadership to develop creativity and creative thinking in English schools

A review of the evidence

Bill Lucas, Ellen Spencer and Louise Stoll



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UNIVERSITY OF  
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CENTRE FOR REAL-WORLD LEARNING

# Creative leadership to develop creativity and creative thinking in English schools:

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### About the Mercers' Company

The Mercers' Company is a livery company focused on being a philanthropic force for good. The Company has a rich history dating back over 700 years with philanthropy as the common thread between past, present and future.

Each year the Company and the charities for which it is trustee work together to support around 180 individual charitable organisations through their people-focused programmes: *Young People & Education*, *Older People & Housing* and *Church & Communities*. The work aims to create positive change across generations, giving those they help the chance to live a fulfilling life now and in the future.

One area of focus of the Young People & Education programme is supporting children and young people through challenging transitions. This gives them valuable life skills and the means to maintain strong mental wellbeing.

### About the Centre for Real-World Learning

Established in 2008, the Centre for Real-World Learning (CRL) at the University of Winchester focuses on building understanding about the learning dispositions that enable individuals to flourish throughout their lives and how best these are cultivated. CRL has undertaken ground-breaking research for City & Guilds, Creativity, Culture and Education, the Mitchell Institute, the Royal Academy of Engineering, the Edge Foundation, Royal Society of Arts and the Organisation for Economic Co-operation and Development (OECD).

Professor Bill Lucas and Dr Ellen Spencer have published three books which are helping teachers understand more about important aspects of learning dispositions, *Teaching Creative Thinking: Developing learners who generate ideas and can think critically* was followed by *Developing Tenacity: Teaching learners how to persevere in the face of difficulty* and, in 2020, *Zest for Learning: Developing curious learners who relish real-world challenges*.

Professor Louise Stoll is Professor of Professional Learning at UCL Institute of Education and an international consultant. Her research and development activity focuses on how schools and local/national systems create capacity for learning in a changing world, with particular emphasis on schools as learning organisations, professional learning communities, learning networks, creative leadership and leadership development. Her many publications include research-informed professional and leadership learning resources. Louise is an Associate of CRL with which she has acted as a strategic adviser and an academic collaborator.

### About Creativity, Culture and Education

Creativity, Culture and Education (CCE) is an international creative learning foundation working across the world to support the development of creative learning programmes. CRL and CCE have been collaborators in research and programme development for more than a decade, both in the UK and internationally. CCE is a partner and a contributor to this review and to the larger piece of work on creative leadership development of which this is a part.

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# Executive Summary

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This review forms the initial foundation for a piece of work commissioned by the Mercers' Company designed to help school leaders in secondary schools in England make creativity central to their students' lives. Across the world the importance of creativity is increasingly acknowledged in education systems. But though leadership in schools is well-researched in general terms, leadership for creativity is not. In this review, we chart the establishment of a robust definition of creative leadership in schools, summarise the case for its importance today, and illustrate what it looks like in secondary schools.

The review builds on the first report of the Durham Commission on Creativity and Education in 2019 and research by the OECD published in the same year by analysing the opportunities and challenges that secondary school leaders face if they truly wish to focus on developing the creativity of their students.

From our reading of the literature, both scholarly and 'grey' sources, 'creative leadership' is the term we believe best encapsulates a kind of school leadership that explicitly develops the creativity of all of its members, staff and students alike. The concept of creative leadership and research relating to it is underdeveloped in education, while in other fields there is more consensus.

Our understanding of 'creative leadership' in its broadest sense suggests that it is a helpful way of capturing the essence of school leaders' role, and a starting point for considering how the sorts of challenges identified by the Durham Commission might best be met.

Our review of the literature suggests that we need to reimagine the kind of leadership that will develop creative students (and creative staff) at a theoretical level, as well as clarifying the practical implications for leaders' practices. Creative leadership will explicitly seek to cultivate creative habits in teaching staff who can, in turn, model these with their students. Creative leaders ensure that there are multiple opportunities for developing the creativity of all young people while at the same time recognising that for a school truly to be a creative organisation then developing the creativity of its leaders *and* staff is important both as a means to an end and as an end in itself.

Leading for creativity is likely to mean setting an agenda for change that involves prioritising practices that develop creative leaders through collaboration within and across professional communities, that promote the development of creative cultures and structures and that utilise creative pedagogies. Creative leadership is a concept whose successful application in schools could benefit from the development of a range of professional learning resources for senior leaders in schools.

This review aims to provide a basis for the development of a leadership toolkit that can be trialled for further development with leaders in English secondary schools, used to support a new professional learning community and, potentially, adapted for school leaders across the world.

# Introduction

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This review is the first part of a more substantial piece of work commissioned by the Mercers' Company designed to help school leaders in secondary schools in England make creativity central to their students' lives. The review builds on the first report of the Durham Commission on Creativity and Education (2019) and on recent research by the OECD (Vincent-Lancrin et al., 2019).

Across the world the importance of creativity is increasingly being acknowledged in education systems (OECD, 2018; Lucas and Venckutė, 2020). But though leadership in schools is well-researched in general terms, leadership for creativity is not. Our lack of understanding is particularly marked in secondary schools at a time in the life of young people when the focus of their study is largely on the development of subject knowledge.

The Durham Commission on Creativity and Education was convened in 2017 to identify ways in which creativity can play a larger part in the lives of young people, both within, and beyond, the current education system (Durham Commission, 2019). Chaired by Sir Nicholas Serota, the Commission consulted leaders and practitioners from industry, science, education, politics, and the arts to arrive at a shared understanding of the 'skills, attributes and behaviours that are characteristic of creativity' (p. 6). Its report lays out practical definitions of both creativity and creative thinking. Focusing on the situation in England, it found that:

*...there is great interest in teaching for creativity and its capacities across the whole education cycle and the whole curriculum. There are many examples of excellent practice in schools. But teaching for creativity is not widespread and is inhibited by the absence of agreed models of teaching for creativity, a lack of confidence among teaching practitioners, and a shortage of resources. (p.7)*

The Commission also noted that, by contrast with the other three home nations of the United Kingdom, the English National Curriculum, its associated examination system and accountability pressures, were perceived by many schools to inhibit rather than encourage the cultivation of creativity in schools.

In a recent survey of headteachers and governors (Britain Thinks, 2019) 99% agreed that it is important to support creativity and creative thinking in schools. But when asked about the top priorities for their schools, creativity is often overtaken by other pressures. Cremin and Barnes (2018) capture these tensions clearly:

*However, many teachers still feel constrained by perceptions of a culture of accountability. You too may already be aware of the classroom impact of an assessment-led system. Such pressure can limit opportunities for creative endeavour and may tempt you to stay within the safe boundaries of the known. Recognising that tensions exist between the incessant drive to raise measurable standards and the impulse to teach more creatively is a good starting point, but finding the energy and enterprise to respond flexibly is a real challenge. (p. 429).*

In this review of evidence we continue the work of the Durham Commission by focusing on the circumstances faced by secondary schools in England, trying to understand the leadership challenges faced by headteachers and senior staff and how best these can be overcome. While our focus is on England many of our examples of promising practices are international suggesting a universality of both the issues faced by schools and their potential solutions.

# 1 What is creativity?

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Over the last seventy years, creativity has become an established field of study starting with the pioneering work of Guilford in the middle of the last century. Guilford saw the creative act as having four stages – preparation, incubation, illumination and verification (Guilford, 1950). He suggested that there are two kinds of thinking – convergent (coming up with one good idea) and divergent (generating multiple solutions). Divergent thinking, he argued, is at the heart of creativity. He sub-divided divergent thinking into three components – fluency (quickly finding multiple solutions to a problem), flexibility (simultaneously considering a variety of alternatives) and originality (selecting ideas that differ from those of other people).

Torrance (1970) took the idea of divergent thinking and developed an additional element, elaboration, (systematizing and organising ideas in greater detail) and developed one of the best known tests of creative thinking using these ingredients (Torrance, 1974). Torrance defined creativity as:

*...a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies; testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results. (Torrance, 1974; p. 8)*

Creativity is both product (such as an invention) and a process (the methods by which new thinking is achieved).

*...creativity can be regarded as the quality of products or responses judged to be creative by appropriate observers, and it can also be regarded as the process by which something so judged is produced. (Amabile, 1996; p. 33)*

## 1.1 What is creativity in the context of schools?

While there are a growing number of researchers promoting creativity in education, there are few definitions which are universally adopted in schools today. A brief historical overview is indicative of how thinking about creativity in schools has evolved.

An important milestone occurred some twenty years ago with the publication of a report by the National

Advisory Committee on Creative and Cultural Education (1999). The definition of creativity adopted was a significant moment in English education:

*...imaginative activity fashioned so as to produce outcomes that are both original and of value (National Advisory Committee on Creative and Cultural Education, 1999; p. 29).*

In the same year a report by Demos went further:

*Creativity is the application of knowledge and skills in new ways to achieve a valued goal. To achieve this, learners must have four key qualities:*

- *the ability to identify new problems, rather than depending on others to define them*
- *the ability to transfer knowledge gained in one context to another in order to solve a problem*
- *a belief in learning as an incremental process, in which repeated attempts will eventually lead to success*
- *the capacity to focus attention in the pursuit of a goal, or set of goals.'*

(Seltzer and Bentley, 1999; p. 10)

For many teachers creativity has seemed daunting because of its apparent connection with the leaps of imagination associated with the heights of scientific, mathematical or artistic imagination or innovation. Twenty years ago Craft (2001) helpfully focused attention on the kind of creativity we are looking for in schools today, what she calls 'little c' or everyday creativity, the capacity to have ideas when needed.

Craft's distinction is echoed by Kaufmann and Beghetto's 4C model (2009) - mini-c, little-c and pro-c and big-c. Kaufman and Beghetto's model expands thinking about creativity beyond the usual two categories that 'most investigations of creativity tend to take' which are everyday creativity ('little-c'), found in nearly all people, and eminent creativity ('Big-C') which is 'reserved for the great' (p. 1). The authors add 'mini-c', which is the sort of creativity inherent in the learning process of children as they imagine things for the first time, and 'Pro-c', which refers to 'professional-level expertise in any creative area'. 'Pro-c' is exemplified in a professional prize-winning author. His or her work cannot be compared with the 'little-c' of an amateur, yet it is not in the same league of 'Hemingway, Poe, and Twain' (p. 5). 'Mini-c' fits between 'little-c' and 'Pro-c'. 'Mini-c' represents insights

that could not be considered creative in a 'little-c' sense, yet to neglect them might mean the creative potential of children is overlooked. It is defined as the 'novel and personally meaningful interpretation of experiences, actions, and events' (p. 3).

Plucker, Beghetto and Dow (2004) combine much of the thinking we have been exploring thus far into an inclusive definition:

*Creativity is the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context.* (Plucker et al., 2004; p. 90)

The Programme for International Student Assessment (PISA) is developing a new test of Creative Thinking to be administered in 2022 alongside its well-known test of reading, maths and science. The definition of creative thinking PISA (OECD Directorate for Education and Skills, 2019) has adopted is:

*...the competence to engage productively in the generation, evaluation and improvement of ideas, that can result in original and effective solutions, advances in knowledge and impactful expressions of imagination.* (p. 7).

From such definitions it is clear that creativity and creative thinking can be used almost interchangeably. The Durham Commission on Creativity in Education (2019) sought to clarify the distinction between the concept and the process:

*Creativity: The capacity to imagine, conceive, express, or make something that was not there before.*

*Creative thinking: A process through which knowledge, intuition and skills are applied to imagine, express or make something novel or individual in its contexts. Creative thinking is present in all areas of life. It may appear spontaneous, but it can be underpinned by perseverance, experimentation, critical thinking and collaboration.* (p. 3)

We find this a useful distinction and one we will return to throughout this review of evidence. The Durham Commission added one more definition which indicates the necessary intentionality of a focus on creativity in schools:

*Teaching for creativity: Explicitly using pedagogies and practices that cultivate creativity in young people.* (p. 3)

We found only a very few models of creativity specifically designed for schools. One (Cremin et al., 2006) specifically designed for early years and primary education focuses on the idea of possibility thinking and the associated cultural features of a classroom, **Figure 1**.

The model of creativity developed by the Centre for Real-World Learning at the University of Winchester

(Lucas et al., 2013; Lucas, 2016) is one used widely in secondary and primary schools. Selected as the starting point for a four year, multi-country study by the OECD's Centre for Educational Research and Innovation (Vincent-Lancrin et al., 2019), the model, **Figure 2**, is in use in more than 30 countries across the world. It provides the main case study example in the Durham Commission report (2019; pp.66-7) and was significant in building the case for creative thinking being the focus of the 2022 PISA Creative Thinking Test (OECD Directorate for Education and Skills, 2019).

The model has five core creative habits with each of them being composed of three sub-habits. It was explicitly developed for and trialled in English schools (Spencer et al., 2012; Lucas et al., 2013), as part of the work of Creative Partnerships<sup>1</sup>.

In the model creative students are:

1. Inquisitive – good at uncovering and pursuing interesting and worthwhile questions in their creative domain. They wonder, question, explore, investigate and challenge assumptions.
2. Imaginative – able to come up with imaginative ideas and solutions. They play with possibilities, make new connections, synthesise ideas and use their intuition as well as their analytical skills.
3. Persistent – not giving up easily. They stick with difficulty, dare to be different and are able to tolerate uncertainty, recognising that certainty is not always possible or helpful.
4. Collaborative – seeing the value of teamwork. They recognise the social dimension of the creative process, value the sharing of products and processes, are able to give and receive feedback and cooperate appropriately as needed (though not necessarily all the time.)
5. Disciplined – recognising the need for developing knowledge and skill in shaping the creative product and in developing expertise. They know how to develop techniques, to reflect critically and constantly seek to craft and improve what they are creating, taking pride in work, attending to details and correcting errors.

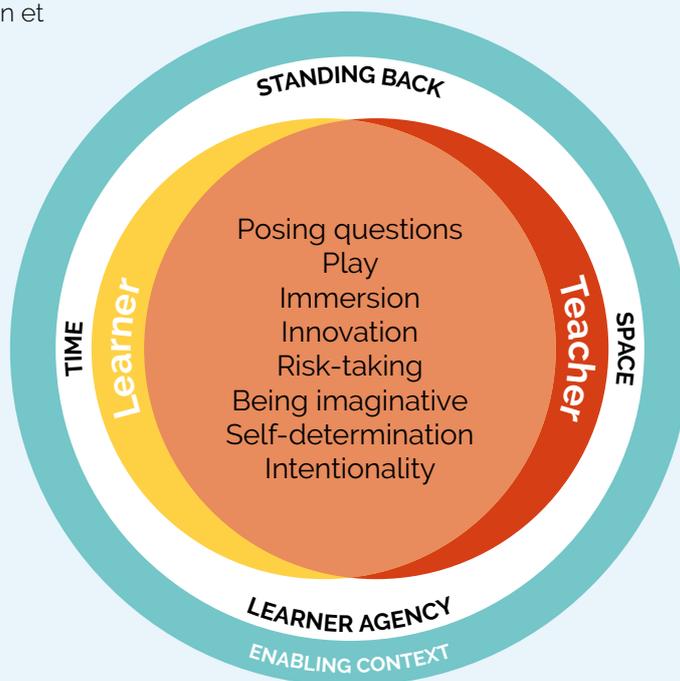
Throughout this review we will return to our five dimensional model of creativity as we seek to ask and answer the question as to how best school leaders can develop the creativity of their students (and staff).

## 1.2 Five myths about creativity

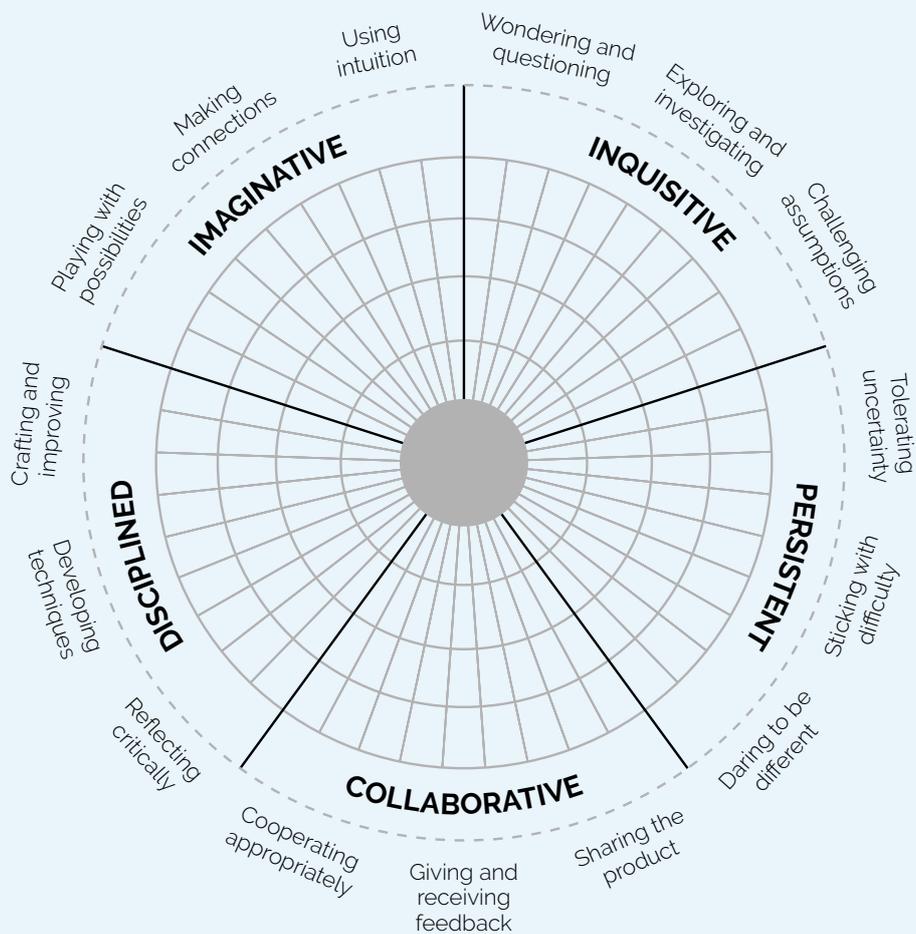
As well as being clearer about what creativity is, school leaders need to be aware of a number of unhelpful myths which it will be helpful to counter if progress is to be made. For without a confident understanding of

<sup>1</sup> Creative Partnerships was a UK Government programme to develop young people's creativity through fostering artists' engagement with schools in specific areas in England.

**Figure 1** Creativity and possibility thinking in schools (Cremin et al., 2006)



**Figure 2** The Centre for Real-World Learning's 5-dimensional model of creativity



creativity's active ingredients, it is difficult for them to exercise leadership.

Over the years a number of these myths have grown up of which these are illustrative:

### 1.2.1 Myth: creativity is too vague to be teachable

Like all complex and important concepts, creativity can be seen through many different lenses and explored in many different contexts. Perhaps because of this, it has attracted resistance from some that suggest it is not precise enough an idea to be teachable. Copley and Patson (2019) refer to this as the myth of 'ineffability':

*Even in research literature, where it might be expected that clear and consistent concepts would be readily available, it seems that many authors default to the pervasive myth that creativity is somehow incapable of being defined. (p. 270)*

In the last decade in England it has recently been possible for organisations as diverse as the Confederation for British Industry (2012) and the Department for Education (Hinds, 2019) to use the word 'creativity' without feeling the need to have to explain or define it.

If there is any lingering uncertainty about the core elements of creativity it may be because of a tendency towards jargon in education, in this instance the use of the phrase 'twenty-first century' and 'non-cognitive' skills by many advocates of creativity.

With regard to the former Lucas (2019) suggests that those who talk uncritically about creativity as one of a number of twenty-first century skills can easily sound like evangelists who are simply opposed to the status quo and not able to be more precise about what today's learners might need to thrive in an uncertain future. While those adopting the expression 'non-cognitive skills' seem at a stroke to be suggesting that they are defined by what they are not and somehow therefore, less valuable. The latter tendency can be seen in a scholarly overview of non-cognitive skills (Gutman and Schoon, 2013) which places creativity alongside attributes such as self-perception, perseverance, metacognitive strategies and resilience.

### 1.2.2 Myth: creativity is inherited and not learned

It is certainly true that there are some very creative people, a small number of whom might be described as a genius in its contemporary sense of 'an exceptionally creative or clever individual' (Pope, 2005: p. 102).

But the existence of very creative people does not prevent each of us from becoming more creative by practising whichever aspects of the concept we wish to improve; every individual is creative to some degree (Csikszentmihalyi, 1996). This extreme form of creativity, as we saw earlier, is often referred to as 'big c' creativity (Craft, 2001; Kaufman and Beghetto, 2009).

With any aspect of human intelligence our genetic background clearly has some role to play. But there is little evidence for the heritability of creative aptitudes such as, for example, divergent thinking (Reznikoff et al., 1973). When it comes to creative personalities it seems that there is a 50-50 influence of genetics and environment (Plomin et al., 2008; Piffer and Hur, 2014). In other words, while we are definitely born with much that shapes our eventual path in life, with creativity, as with learning, there is a considerable amount which can be developed.

In the last decade there is growing evidence as to the teachability of creativity and the mechanisms by which it is learned, something we return to in more detail in 4.1.3.

### 1.2.3 Myth: creativity is uniquely the preserve of the arts

This myth runs deep in society in general and in schools in particular. The Durham Commission on Creativity and Education rebuts such thinking strongly (2019):

*There remains a misconception that creativity is solely the province of the arts. This is not true. Creativity exists in all disciplines. It is valued by mathematicians, scientists and entrepreneurs, as well as by artists, writers and composers. (p. 6)*

In a subtle consideration of the relationship between creativity and the arts it goes on to suggest that, while the arts are far from exclusive in their nurturing of creativity, they do have a 'distinct contribution' (p. 23) to make. Arts and culture are of vital significance, and their enjoyment should be a part of the rich education that all children receive.

In making these distinctions the Durham Commission is restating the NACCCE Commission's suggestion that creativity and creative thinking can exist in and be stimulated by any domain of life or subject of the school curriculum.

*Creativity is possible in all areas of human activity, including the arts, sciences, at work at play and in all other areas of daily life. (National Advisory Committee on Creative and Cultural Education, 1999, page 6)*

Nevertheless, the arts have a particular contribution to make. This has been eloquently summarised by Alexander (2017):

*...that they confront conventional wisdom and speak truth to power; that they encourage us to think and feel more deeply; that they are unique and powerful ways of making sense of ourselves and our world; that they embody much of what it means to be civilised. (p. 1)*

The relationship between the arts and creativity is, unsurprisingly hugely complex with many aspects still needing to be better understood, (Sharp, 2001).

Nevertheless, as UNESCO suggested in its review of the relationship between arts in education and creativity in Asian schools (UNESCO, 2005), it is reasonable to suggest that:

*...as a creative medium, the arts stimulate cognitive development, encourage innovative thinking and creativity, engender understanding of the importance of cultural diversity and reinforce behavior patterns underlying social tolerance. (p. vii)*

For all these reasons, school leaders may wish to consider carefully the place of the arts in their curricula along with the potential contributions which all subjects can make.

#### 1.2.4 Myth: creativity detracts from the standards agenda

In recent years creativity in English schools has become intertwined with another issue, the perception that the focus on standards is making it more difficult for teachers to teach creatively or plan for creative thinking on the part of the learners.

Far from detracting from a proper focus on raising standards, recent research suggests that creativity might actually contribute to raising achievement. There is, for example, emerging evidence that creative learning environments increase learners' attainment (Davies et al., 2013). Several meta-analytical studies (Higgins et al., 2005; Abrami, 2015; Gajda et al., 2017) have found moderate positive impact on achievement from critical and creative thinking approaches. A recent study supported by the Education Endowment Foundation (Gorard et al., 2015) found improvements to literacy and numeracy, albeit in primary schools.

In an initial review of evidence Lucas (2019) has summarised some of the connections between creativity and achievement in an Australian context where critical and creative thinking is a mandated element of their National Curriculum. Although the inclusion of creativity in school curricula is relatively recent and, therefore, has not yet been looked at systematically, there are studies clearly indicating a statistically significant positive impact on achievement in general and, in a few cases, on performance in literacy and numeracy.

There is clearly much more research to be undertaken here, not least because the mark schemes of examination systems across the world find it difficult to reward the originality of thinking which is the hallmark of creativity.

#### 1.2.5 Myth: creativity is not connected to 'domain knowledge'

An unhelpful belief has grown over recent years that creativity is somehow separate from the kind of knowledge to be found in a subject domain and that it can exist in ways which mean that it does not require subject expertise. An exaggerated version of this myth

would suggest that since knowledge is not required to be creative we can instead just focus on developing the creativity of young people.

But increasingly it is clear from research that there are strong relationships between knowledge and creativity. Atkinson (2018) emphasises the importance of domain knowledge for creativity:

*'...we should not ignore domain knowledge either. In fact it is important to expand knowledge in several fields to increase the repertoire of creative activity. More knowledge areas create more opportunities for concept combination and modification' (p. 154).*

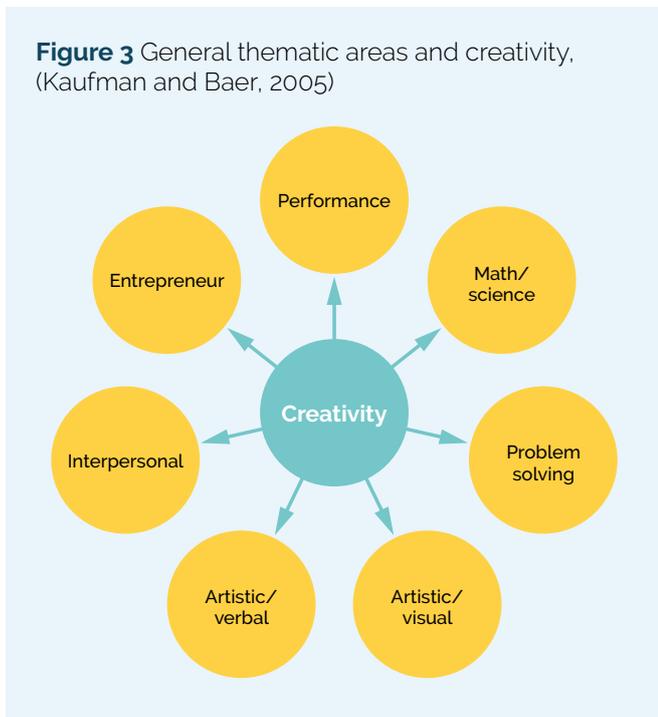
That said there is an ongoing debate about the degree to which creativity is domain specific or domain general, whether, for example, being creative is different in maths or drama, at school or in the community, at play or at work. In an even-handed review of this debate Baer (2010) reviews arguments for both approaches. In its simplest form those arguing for domain specificity point to the fact that creative people are not creative in all subjects or domains. Their opponents suggest that creative thinking skills can be learned in one domain and transferred to another with practice. Helpfully there is a model (Kaufman and Baer, 2005) which helps us to see how this relationship works and reminds us of the importance of acknowledging and incorporating aspects of both theories as we consider the topic of creativity. The model has four levels.

1. Initial requirements - the domain general factors which influence creative performance to some degree across all domains (such as intelligence).
2. General thematic areas - the broadly defined fields or disciplines of activities, see **Figure 3**.
3. Smaller domains - the more bounded areas within larger general thematic areas such as, for example in Maths/Science, subdomains like arithmetic, geometry, biology, electronics.
4. Microdomains - the more specific tasks within domains. So, within poetry, for example, limerick, haiku, villanelle or sonnet.

Creativity, it is increasingly clear, does not exist in a vacuum; it is applied in a domain or context. These general areas can be defined by a discipline (such as science) or a domain (such as problem-solving), **Figure 3**.

The Kaufman and Baer elements in **Figure 3** are simply illustrative; more disciplines, the humanities, for example, or more domains such as ethical understanding could easily be incorporated. At the relatively general level it makes sense to see how some aspect or technique in the area of developing ideas might be domain general, but once we move into micro-domains specificity is required. There is no reason to see why someone able to exercise their creativity in electronics in developing

**Figure 3** General thematic areas and creativity, (Kaufman and Baer, 2005)

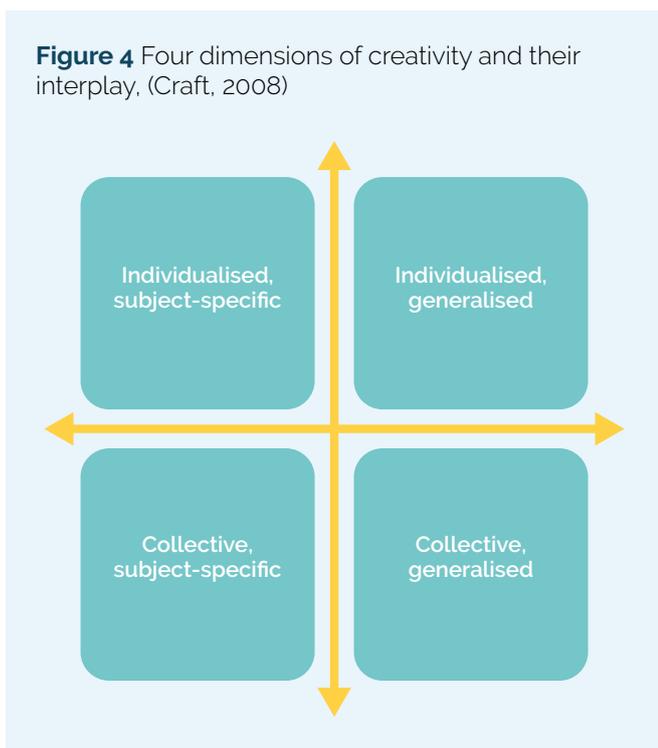


innovative new circuit boards would necessarily be similarly creative when writing a haiku poem.

Craft (2008) helpfully shows just some of the ways in which four core aspects of creativity can be visualised, the degree to which it is individual or collective, subject specific or domain general. **Figure 4:**

A study by Bolden et al. (2020) reported that teachers being observed thought they were assessing creativity but were actually assessing content knowledge (p. 367). This is perhaps telling about the extent to which knowledge is essential for creativity.

**Figure 4** Four dimensions of creativity and their interplay, (Craft, 2008)



Attempts to foster creativity in schools often take the form of 'real-life' projects. It is important that the knowledge base on which such projects are developed is strong. Baublits (2014) makes an important distinction between the decisions taken about adult learning methods with those which are appropriate for young people, between andragogy and pedagogy:

*Andragogy is the adult education theory stating that adults will learn when they understand why the knowledge is important or can apply the knowledge to their own life situations; whereas, pedagogy is considered the art and science of teaching/educating a child. (p. 147)*

It may be helpful to remember that the idea of needing to apply knowledge to life situations is perhaps too readily and uncritically applied to pedagogy for adolescents, when the fundamental building blocks of knowledge are not yet in place. Further, 'real-life' situations as applied to young people are not the same as for adults: children have the benefit of not needing to specialise in their knowledge and benefit from retaining a broad and balanced outlook. The dividing line comes with 'age, emotional maturity, and experience' (p. 147).

One of the key principles of effective transfer of learning is the development of connections between what is being taught and what is being experienced by a young person in their life outside school, in other words that the learner sees its relevance, and the use of meaningful real-life problems facilitates this process (Schneider and Stern, 2010).

A general point about knowledge comes from Sternberg and Lubart (1993), in *Investing in Creativity*. The authors speak of the importance of knowledge in order to contribute to a field, to assess problems in the field, to judge which problems are important. He also makes the point that knowledge can lead to 'tunnel vision' or 'entrenchment'. It could be argued that one strength of interdisciplinary curricula might be the avoidance of such tunnel vision:

*One cannot think creatively unless one has the knowledge with which to think creatively. Creativity represents a balance between knowledge and freeing oneself of that knowledge (Johnson-Laird, 1988; p. 207, cited by Sternberg, 2012; p. 4)*

## 2 Why do we need creativity in schools?

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Over the two decades since the National Advisory Committee on Creative and Cultural Education report (1999) there has been a significant convergence of opinion as to the value of creativity in education with employers, psychologists, educationalists and policy makers in most countries across the world recognising the many benefits to young people of cultivating creativity in schools. Such a meeting of minds as to the value of creativity is a relatively recent phenomenon.

### 2.1 A multi-dimensional case

Here we briefly outline some of the key arguments for the importance of creativity, not for their own sake but because the thought processes they encompass are exactly the ones about which it will be helpful if school leaders have opinions. In each of them there are evidence-based arguments for a positive role for creativity; in each it is possible to overclaim the contribution being suggested and a reminder of the need, therefore, for leaders to be discriminating.

#### 2.1.1 Wellbeing

The connections between personal fulfilment, wellbeing and creativity have been known for a long while. More than half a century ago Maslow (1943) argued that creativity or 'creativity' is a facet of self-actualisation which itself sits at the top of his well-known hierarchy of needs. Human beings, he argues, have certain basic needs such as food, water, shelter and sleep. But to be really fulfilled they need to realise their true potential, their full creative selves.

Csikszentmihalyi (1996) coined the term 'flow' to describe a state of total absorption in an engaging task. He found flow to be an ingredient of many creative activities and went on to show that flow is highly correlated with subjective well-being or happiness.

Meanwhile the reported life satisfaction of UK school students (OECD, 2019) was 6.16, below the OECD average of 7.04, and, according to the Department for Education (2019), wellbeing declines as children and young people get older. Researchers in New Zealand (Conner et al., 2017) have identified a link between everyday creative activity and increased wellbeing and creativity in young adults. But it is important to remember the many other positive (and negative) influences on wellbeing apart from creativity.

#### 2.1.2 Employability

Among a growing number of global employer organisations the World Economic Forum (2015) has for a number of years argued that, beyond foundational literacies such as literacy, numeracy and science, creativity is one of a number of desirable competencies, which, along with certain character qualities describe the range of skills employees will need to thrive today, **Figure 5**.

In terms of the Centre for Real-World Learning's model of creativity (see **Figure 2**, p. 6) we might argue that some of the character qualities such as curiosity and grit are also components of creativity. But the general point is clear. Creativity is in demand as an aspect of what it is to be employable.

More recently, as Petrie noted in *Spotlight: Creativity*, (2020) creativity was recorded as the '#1 top skill by LinkedIn.com for the second year in a row, revealed from their network of over 660+ million users and 20+ million professionals in surfacing the top 15 skills employers want' (p. 10).

A specific aspect of this is the idea of digital creative skills (Lucas, 2020). An emerging field, digital creativity can be defined as:

*Purposeful imaginative activity, mediated by digital technologies, generating outcomes that are original and valuable in relation to the learner.* (Barrajas et al., 2018; p. 111).

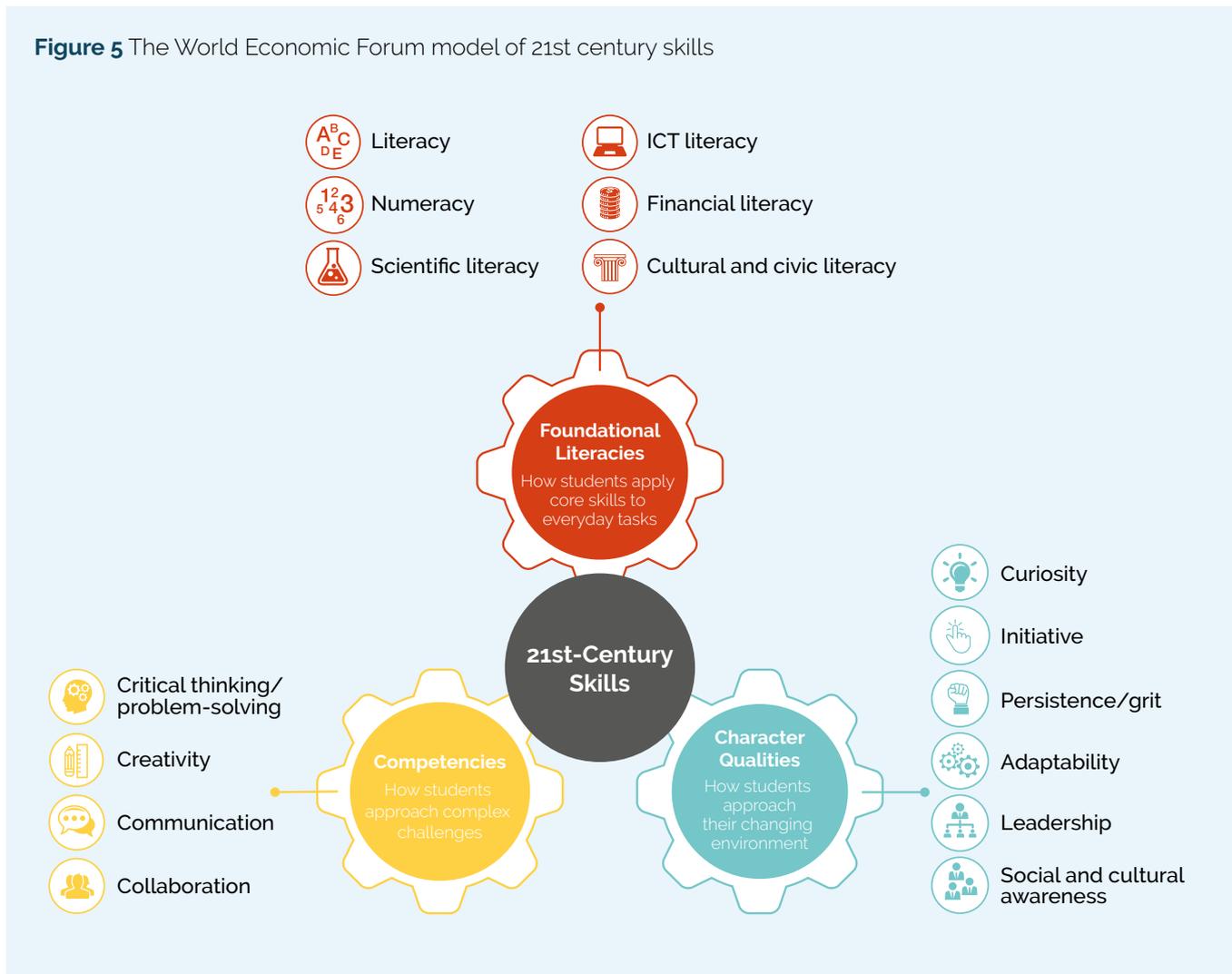
While it arguable that digital is a ubiquitous phenomenon, it is also the case that, in terms of employability, the combination of digital expertise and creativity has the potential to enhance employability considerably.

#### 2.1.3 Economic growth

Just as creativity and its associated skills are valuable to employees seeking employment, so too it is increasingly associated with economic growth. The term sometimes used to bring these concepts together outside education is the 'creative economy' a concept describing the system in which creative people and creative industries interact to generate wealth and value (Howkins, 2001).

*Creative economy is about the relationship between creativity and economics. Creativity is not new and neither is economics, but what is new is the nature and extent of the relationship between them and how they can be combined to create value and wealth.* (Siciu, 2008; p. 146).

**Figure 5** The World Economic Forum model of 21st century skills



In earlier work on creativity (Spencer et al., 2012) we touched on one of the inherent tensions in debates about creativity: the degree to which an economic imperative becomes the main (and for some, off-putting) driving force in the policy discourse relating to creativity. Creativity is frequently seen as a means of handling economic challenges and change, or even wider global issues. For example, Freedman's (2007) US-focussed paper critiquing art education policy makes this point about instrumentality: that public policy has often been about 'businessization of education' and development of an 'essentialist curriculum' which focuses on 'security' to counter global tensions.

Such instrumentality is frequently given as an argument for introducing or championing creativity or creative thinking, and this is reflected in much of the literature written from an education perspective, too. There is often an ingrained assumption that creativity is essential to learners today; that businesses and organisations demand it; that economic and national success, international relations and ecological management all require it. While this may or may not be true, we suggest that the capacity to have a good idea and make new connections has served us well in many domains of life and for many centuries.

### 2.1.4 A changing world

In fast changing times it is intuitively sensible to consider how by exercising our imagination and by being inquisitive we might use our creativity to think new thoughts and make progress with some of the challenging issues we face globally today.

A review by Tauritz (2016) observes how 'many scholars agree that it is essential in our rapidly changing world for young people to develop' (p. 91) a series of skills and attitudes to deal with uncertainty. A careful argument for this claim has been made by Gratton and Scott (2016) who show how creativity and learning, especially the ability to unlearn and rethink, are essential skills in rethinking the way we live, as increasingly there is the prospect of many of us living to the age of 100.

As with many of the claims and counter claims which school leaders need to weigh up, it is possible to overstate such arguments. The idea that 'Education should foster the development of humans who when faced with uncertainty do not become paralysed, but on the contrary can act responsibly and constructively' (Tauritz, 2016; p. 91) could be taken to imply that humans have not, to date, been successful at doing this!

Kaufman (2018) reminds us of both the importance of creativity and the danger of overclaiming its ability to solve the problem of world hunger, climate change, or hatred between cultural, ethnic, and political groups. It is, he argues, a long-term strategy:

*Investing in creativity is rarely a short-term solution. But, over time, people who are happier, more engaged with life, interacting with diverse groups, and more tolerant of others will be the ones who can bring us closer to the world that many of us might imagine only as a fantasy. Creativity represents a solid starting point for the future. (p. 4).*

It is easy to get drawn into some of these arguments and end up taking overly dogmatic positions.

### 2.1.5 International impetus

Across the world there are many education systems which are making progress with fostering creativity within educational settings.

The model adopted by Australia (Australian Government, 2018) is indicative of an approach which explicitly seeks to combine the conventional subjects of a school curriculum with concepts such as creativity, (referred to as a capability called 'creative and critical thinking') see **Figure 6**, p. 18.

Australia is just one of a number of countries and jurisdictions focusing on creativity; a number of States in Canada, Finland and Singapore are three others with

well-developed approaches. Along with communication, critical thinking and problem-solving, creativity is the skill most frequently identified by countries. From 102 countries reviewed (Care et al., 2016) the kinds of skills associated with creativity are mentioned by 76 countries (36 in vision or mission statements, 51 countries in curriculum documents). 11 countries map progression of the skills associated with creativity and other broader concepts across multiple age groups and subjects.

That the creativity of fifteen year olds is to be tested by PISA in 2022 (OECD, 2019) and that a State like Victoria in Australia (Victorian Curriculum and Assessment Authority, 2020) is already embarked on testing the creativity of its secondary school students is a further indication of a direction of travel.

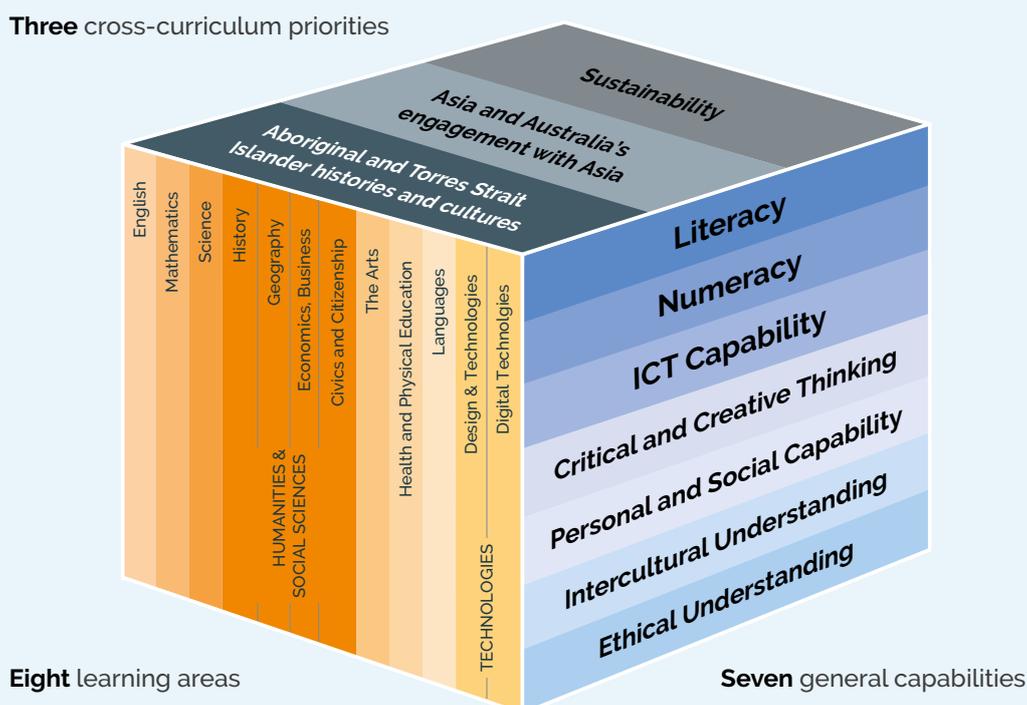
### 2.1.6 Educational benefits more broadly

In thinking about the case for creativity it is easy to omit the obvious argument, namely that creativity as we have defined it is a public and personal good in itself.

To reiterate, here are the five creative habits of mind we have identified and their sub-habits:

1. Inquisitive: Wondering and Questioning, Exploring and Investigating and Challenging assumptions
2. Imaginative: Playing with possibilities, Making new connections and Challenging assumptions
3. Persistent: Daring to be different, Sticking with difficulty and Tolerating uncertainty

**Figure 6** Creativity in the Australian Curriculum (Australian Government, 2018)



4. Collaborative: Cooperating appropriately, Giving and receiving feedback and Sharing the product
5. Disciplined: Crafting and Improving, Developing techniques and Reflecting critically.

Various studies of which these three are illustrative have shown the benefits of specific aspects of creativity – curiosity and being inquisitive (Friedman, 2005), persistence, perseverance and grit (Duckworth et al., 2007), and giving and receiving certain kinds of feedback (Hattie and Gan, 2011).

Some ten years ago we coined the phrase ‘expansive education’ (Lucas et al., 2013) to indicate an approach to school that consciously values the development of ‘learning dispositions’. These include those sub-elements of our model of creativity (imagination, for example). The expansive approach also values the knowledge that underpins subject domains, and approaches to teaching and learning which seek, appropriately, to use real-world assignments. Such assignments inevitably end up being inter-disciplinary.

*Expansive education says: whatever else we are doing in schools, we ought to be consciously, persistently and systematically cultivating the habits and qualities of mind that we think will serve our children well, and which will add to the harmony, prosperity and creativity of the societies they live in. (p. 8).*

In this last aspect of the case for creativity lies the opportunity for school leaders to take a decision not simply based on conventional evidence, but also on values – that a society needs young people with certain habits of mind who also love knowledge and are skilful, and to recognise that such a blend of knowledge, skills and attributes is a powerful goal of schooling. What we describe as expansive education is very similar to what David Perkins (2009) calls the ‘whole game of learning’ as a metaphor to describe the kinds of holistic education we need to be providing young people that may be useful to them in their later lives.

It also seems likely that young people who have a greater sense of their creative self-efficacy are more likely to volunteer to do good in the world, another manifestation of an expansive education (Lucas and Spencer, 2018).

## 2.2 England compared with the rest of the UK

By contrast with the other three home nations, England is currently showing little appetite for promoting creativity in schools. Certainly, recommendations from The Durham Commission on Creativity and Education have not yet been picked up by the Department for Education. Encouragingly one of the Commission’s key recommendations, the establishment of Creativity Collaboratives, a national network in which schools will collaborate to establish and sustain the conditions necessary for nurturing creativity in the classroom

across the curriculum, has recently been launched. The scheme offers money and practical support to school leaders and teachers (see 4.1.5). Earlier in 2021 the Creativity Exchange<sup>2</sup>, an online platform providing encouragement, insights and resources for teachers was established.

The relatively recent revised framework for inspection (Office for Standards in Education, 2019) offers some flexibility for schools in terms of encouraging a breadth of curriculum. It conceptualises the role of school leaders as determining their school’s intent, implementation and impact. While it is too soon to see how the new framework is being interpreted in practice, some secondary schools are using it to promote an expansive interpretation of curriculum including an emphasis on creativity.

For more than 4,700 church schools in England there is an additional accountability framework provided by the Statutory Inspection of Anglican and Methodist Schools (SIAMS). A new SIAMS framework came into force in 2018. It explicitly draws on the Church of England’s *Vision for Education* (2016) and promotes creativity across all subjects:

*Creativity is not limited to God: if human beings are in God’s image, then they too can be creative. In education, this is partly about the importance of art, design, music, drama, dance, poetry, fiction, and film; it is also about discovery and innovation in the sciences and technology, constructive as well as critical thinking in the humanities, entrepreneurship in business, leadership in all spheres, and inspiration, imagination and improvisation in ethics and religion. (p. 12).*

By contrast the national curricula of Scotland, Northern Ireland and Wales each seek to foster an environment in which creativity is explicitly valued in schools.

Education Scotland positions creativity ‘very clearly at the heart of the philosophy of Curriculum for Excellence and [it] is fundamental to the definition of what it means to be a ‘successful learner’ in the Scottish education system.’ (2013; p i).

In Northern Ireland, all parts of the Key Stage 1 and 2 curricula emphasise the development of five ‘Thinking Skills and Personal Capabilities’ (Council for the Curriculum Examinations & Assessment, 2020).

In Wales, the curriculum is designed with four purposes. One of these highlights the importance of creativity in its ambition to support learners to become ‘enterprising, creative contributors, ready to play a full part in life and work’ (Welsh Government, 2020). In Welsh secondary schools, arts programmes are underpinned by a concept of creative learning represented by our five dimensional model (Art Council of Wales, 2020).

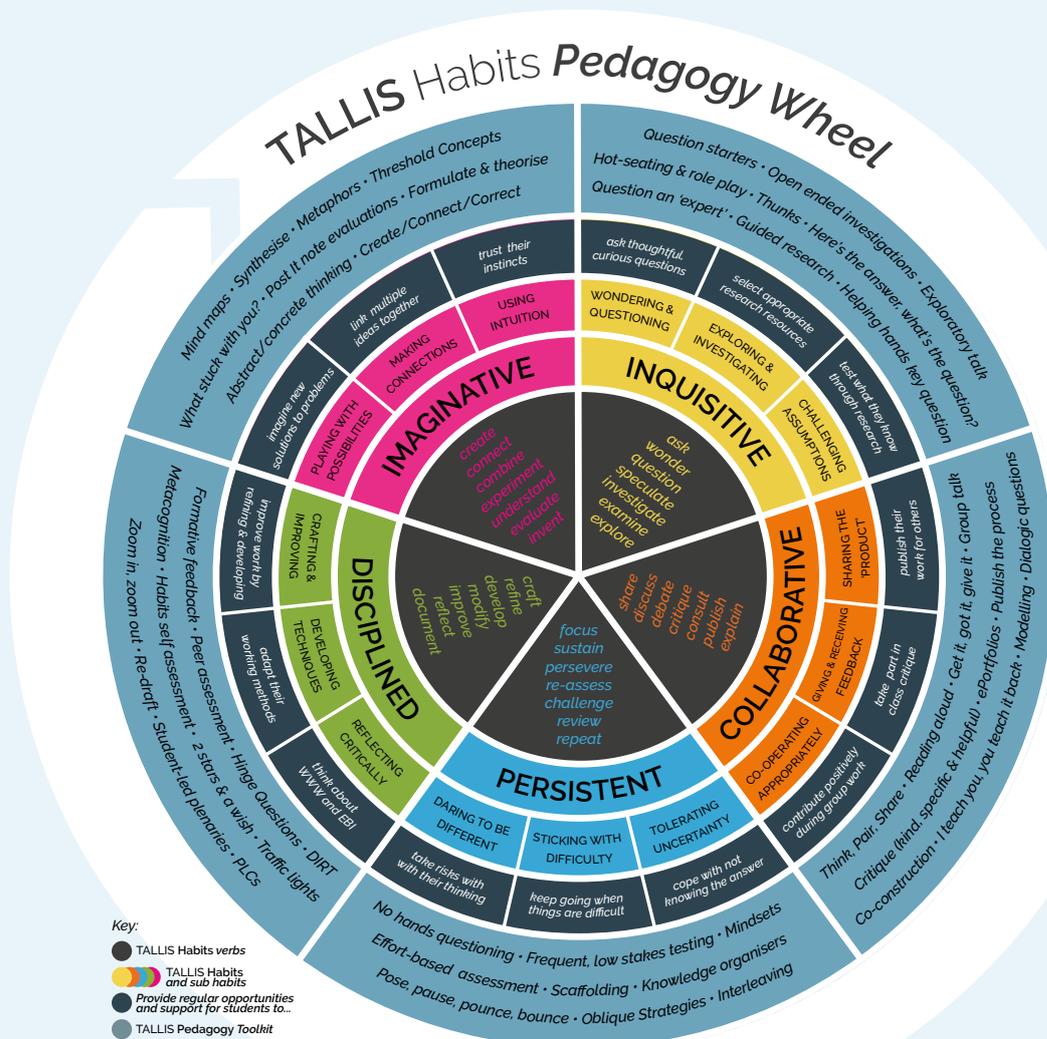
<sup>2</sup> <https://www.creativityexchange.org.uk/>

# 3 What does creativity look like in secondary schools?

One answer to this question, and the one in terms of a visualisation of a whole-school approach featured in the Durham Commission (2019, p. 67), is the model which has evolved over nearly a decade in two secondary schools, one in Sydney, Australia and the other in London, England, **Figure 7**.

Through the various rings it begins to bring the framework alive by developing a common language, exemplifying the sub-habits in student language (keep going when things are difficult) and, in the large blue ring, give practical example of thinking routines and teaching and learning methods. Of course the existence

**Figure 7** The Centre for Real-World Learning's model of creativity as the core of Tallis Habits Pedagogy Wheel



The TALLIS Habits are based on Lucas, Spencer, and Claxton (2013) *Progression in Student Creativity in School* OECD Publishing.

of a model such as the one above does not answer the question, what does creativity look like in a school?

To begin to answer that we have to explore all the lived experiences of the school's culture, especially understanding what is really valued, the degree to which the school faces outwards and embraces partnership working, the opportunities it affords students to develop their creativity outside the classroom, the decisions teachers make about which teaching and learning methods to use and the school's attitude to assessment, especially the degree to which it sees itself as a learning organisation (Stoll and Kools, 2017), a place where mistake-making is seen as an opportunity for growth and effort not failure and misery.

### 3.1 The unspoken 'rules' of creativity

It is sometimes said that culture is what an organisation does 'when it thinks no-one is looking'. By this is meant that, in seeking to understand the truth of what it is like to be living and learning in an organisation it is helpful to get to an organisation's 'default' settings (what it does when it thinks no one is looking). What, for example, is the organisation's attitude to mistakes? Are they seen as a badge of failure, an indication of perseverance, a sign that the process of developing ideas or products is encouraged or something else?

The answer to this kind of question would be a strong clue as to any unspoken rule of the way things are done in that particular setting.

The features of a conducive climate for creativity in schools have been summarised by Craft (2010) and include:

1. Focusing on pupils' motivation to be creative
2. Encouraging of purposeful outcomes across the curriculum
3. Fostering an in-depth knowledge of disciplines
4. Using language both to stimulate and assess imaginativeness
5. Offering a clear curriculum structure but also involving pupils in creating new routines where appropriate
6. Encouraging pupils to go beyond what is expected
7. Helping pupils to find personal relevance in their learning
8. Modelling the existence of alternatives in the way information is imparted while also helping them to learn about and understand existing conventions
9. Encouraging pupils to explore alternative ways of being and doing, and celebrating, where appropriate, their courage to be different
10. Giving pupils enough time to incubate their ideas
11. Encouraging the adoption of different perspectives
12. Modelling the variety of ways in which information is discovered, explored and imparted.

Many others have contributed to thinking about the climate necessary for creativity to flourish (Torrance, 1970; Cropley, 1997; QCA, 2005; Beghetto and Kaufman, 2014) but their thinking can broadly be subsumed within Craft's list.

Interestingly many of the elements of the list above were noticed by Ofsted in a review of creativity in primary and secondary schools nearly two decades ago. Ofsted (2003) suggested that teachers who inspire creativity 'have a clear understanding of what it means to be creative' (p. 8), are alert to 'happy accidents' (p. 9), have good subject knowledge and know when to call on external expertise. They 'recognised that pupils also need secure knowledge...' (p. 10), show curiosity and willingness to look outside their subject and see connections (p. 10) and allow flexibility in their timetables because creativity needs time (p. 12).

Exactly how these elements are experienced in any school will depend on context but their general intent (to use the Ofsted term) is clear. Many will be either reinforced or negated by the school's reward system (what is formally valued through reports and internal accolades for good work) and by the school's attitude towards display of work. So, for example, if all that is singled out for praise in school assemblies is success on the sports field, then the perhaps less obvious examples of creativity may remain invisible. Or if all that is mounted on the walls of the corridors are triple-mounted examples of perfect work (rather than the 5 drafts/prototypes from early outline of a poem/design for a new wildlife garden to the final version) then the creative process is likely to be hidden or undervalued.

Beghetto and Kaufman (2014) remind us that teachers' own beliefs play a role as well. They argue that teachers need to:

- Understand the creativity studies literature;
- Monitor how students are finding their learning environment;
- Encourage them to share creativity;
- Provide supportive feedback;
- Model creativity as they teach;
- Recognise that what works for one student may not work for another (p. 28).

In *Students and Teachers Implicit and Explicit Theories of Creativity* (2019) Uszyńska-Jarmoc and Kunat identify the different ways creativity is seen inside the school and compares these understandings with the 'scientific notion' of the term. While creativity is seen as important by many authors and policymakers, it can still mean 'many things to many people – a promise, a threat, a hope, a distraction, or a goal' (p. 224; the authors cite Kaufman et al., 2016). Much is said about how difficult creativity is to define, and the argument is made that the problem of defining it leads to difficulty in teaching it

and so growth of creativity in pupils is slow (p. 226). The authors argue that:

*...it is important that creativity itself should be considered to be a goal, as well as a basic value in education. This is necessary to support the growth of creative capacity, not only among pupils, but also among teachers, in order to help them develop their creative competence. (p. 224).*

It is likely that teachers and leaders may have quite different conceptions of creativity and part of the role of the leader is to ensure a common conception. The authors suggest that teaching for creativity requires teachers be aware that creativity is a multi-meaning term and pupils' knowledge about their own creativity be monitored (p. 226).

Kampylis and Berki (2014) lay out eight key principles relating to the practices that teachers can engage in. Corresponding leadership implications could be drawn from each of these principles. The key principles are:

1. Creativity can be promoted through all school subjects.
2. Influence creative thinking through well-designed learning spaces.
3. Increase the use of open-ended questions.
4. Engage learners in meaningful and authentic activities.
5. Collaboration enhances creativity.
6. Make efficient use of educational technologies.
7. Allow for mistakes and sensible risk-taking.
8. Learn how to assess and reward creativity.

The conditions conducive to the development of creativity which we have described in this section should not obscure us from the equally important point that creativity can be actively stimulated by appropriate pressure. Ron Berger's *An Ethic of Excellence* (2003) describes how his pupils put themselves under immense pressure as they presented important reports about water quality to the residents of their town. It was the high-stakes nature of the work that inspired students to make it excellent; to draft and redraft; and to calculate and recalculate to ensure accuracy of vital data points.

There need be no battle between creativity and excellence. There is no conflict between learning through and from mistakes or trial and error, and aiming for excellence.

### 3.2 Signature pedagogies for creativity

If you wanted to teach someone how to develop their creativity and thinking processes what methods would you choose? From several decades of research into the teaching of creativity it has become clear that some methods do this more effectively than others.

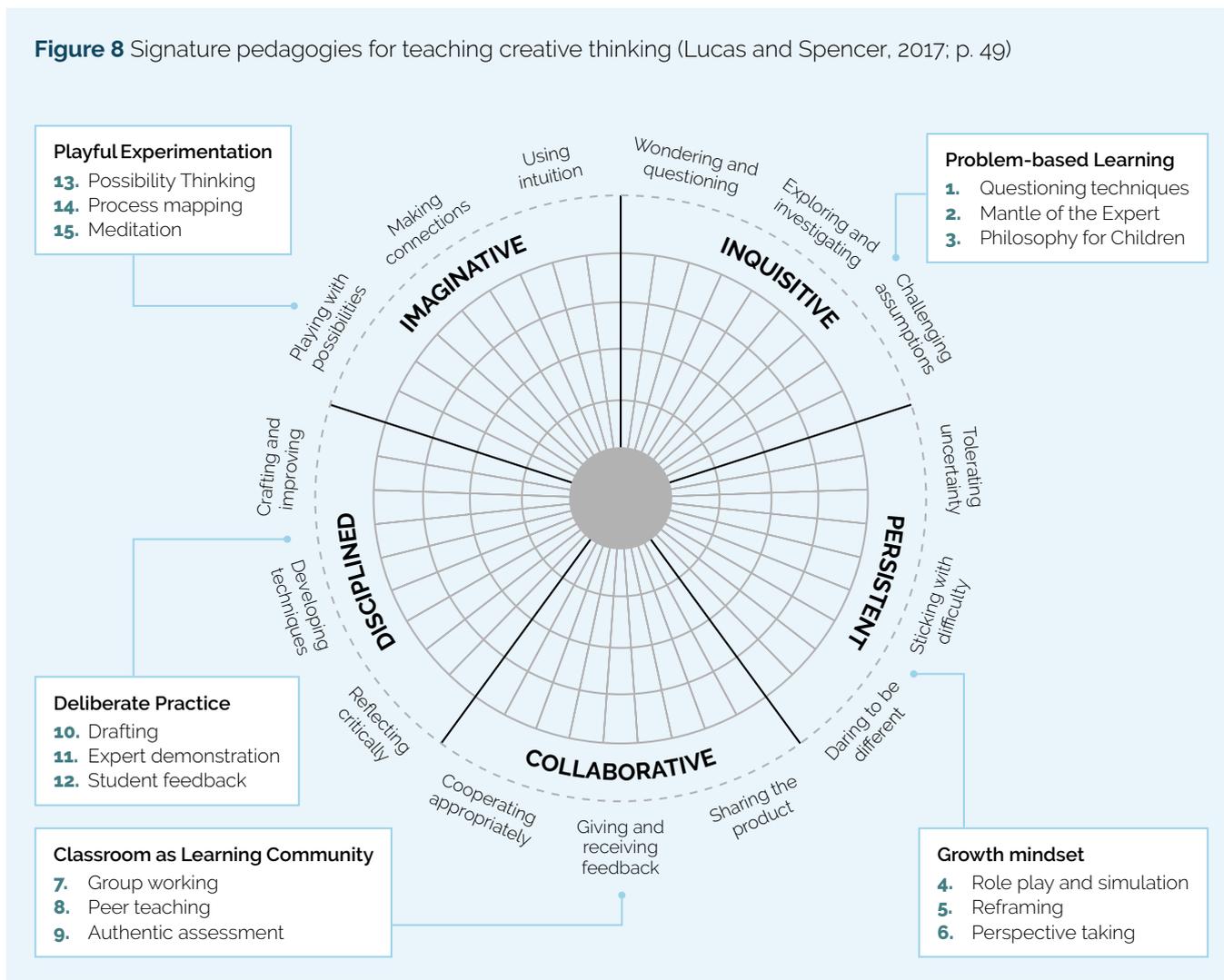
Lee Shulman has suggested that pedagogies which particularly suit a given vocational route (training to become a nurse or an accountant or a lawyer, for example) are characterised by teaching and learning methods that are known to be effective for that profession: 'the types of teaching that organize the fundamental ways in which future practitioners are educated for their new professions' (Shulman, 2005; p. 52).

In earlier research (Lucas and Spencer, 2017) we used the term signature pedagogy and applied it to the five creative habits of mind and their attendant knowledge and skills in our model (**Figure 8**). Each of the five signature pedagogies is illustrated by three teaching methods such as, for example, 'Mantle of the Expert' (the creation of a fictional world where students assume the roles of experts in a specific field) or 'Philosophy for Children' (an approach to teaching and learning, in which children take part in philosophical enquiry).

Research by the OECD's Centre for Educational Research and Innovation in 11 countries involving 800 teachers and 20,000 students in 320 primary and secondary schools explored the ways in which creativity and critical thinking can best be taught and assessed. Taking the five-dimensional model as its starting point (**Figures 2 and 8**) the OECD (Vincent-Lancrin et al., 2019) identified 11 signature pedagogies likely to be effective in cultivating creative dispositions in all subjects:

1. 'Creative Partnerships' - 'partnerships between creative practitioners and schools' (p. 101).
2. 'Design Thinking' - method adopted from business. Involves 'engaging students in learning experiences in which they think and act like designers' (p. 103).
3. Dialogic teaching - teaching method that 'fosters continuous and controlled dialogue between students and teachers' (p. 105).
4. Metacognitive pedagogy - 'an approach that makes teachers and students reflect on their teaching and learning' (p. 107).
5. 'Modern Band Movement' - its programmes 'draw upon a teaching method called 'Music as a Second Language'' (p. 109).
6. 'Montessori' - a model with successive stages of development corresponding to 'periods of schooling with learning environments and curricula designed to respond to the needs and characteristics of each stage' (p. 111).
7. 'Orff Schulwerk' - a pedagogical model 'focused on creativity' where learners are 'led through a discovery learning process of exploring, experimenting, selecting and creating' (p. 113).
8. Project-Based learning - cross-disciplinary method of instruction to 'develop learners' in-depth understanding of academic content along with a wide range of skills' (p. 115).

**Figure 8** Signature pedagogies for teaching creative thinking (Lucas and Spencer, 2017; p. 49)



- 9. Research-based learning - an approach promoting 'a research project as part of a learning and teaching strategy' (p.117).
- 10. 'Studio Thinking' - a framework with four structures 'describing the interactions of time, space and relationships between teacher and students' and eight habits of mind for visual arts classrooms (p. 119).
- 11. 'Teaching for Artistic Behavior' - 'pedagogical approach based on student agency and choice' (p. 121)

The research found that in some subjects specific pedagogies were of particular use: metacognitive pedagogy in maths, 'Modern Band' movement and 'Orff Schulwerk' in music, Project-based learning and Research-based learning in science, and 'Studio Thinking' and 'Teaching for Artistic Behavior' in the visual arts.

The OECD report also lays out a framework to support teachers in designing classroom activities to teach these skills as part of the curriculum. It includes design criteria, and a 'portfolio of domain-general and domain-specific rubrics' (p. 129) to assist planning. Design criteria include:

- 1. Create students' interest to learn.
- 2. Be challenging.
- 3. Develop clear technical knowledge in one or more curriculum domains.
- 4. Include the development of a visible product or artefact.
- 5. Have students co-design part of the product or solution.
- 6. Deal with problems that can be looked at from different perspectives.
- 7. Leave room for the unexpected.
- 8. Include time and space for students to reflect and to give and receive feedback.

The eight design criteria identified by the OECD clearly complement the list describing conducive features of a school culture on page 23. A systematic review by Cremin and Chappell (2019) found seven features characterising creative pedagogical practices:

- 1. Generating and exploring ideas
- 2. Encouraging autonomy and agency
- 3. Playfulness

4. Problem-solving
5. Risk-taking
6. Co-constructing and collaborating
7. Teacher creativity.

Cremin and Chappell's identification of these key pedagogies sits well with many other reviews of this area. But their research shows that there is more to do in understanding the impact of pedagogies on the development of young people's creativity. We need, they argue, to develop:

*...a richly nuanced understanding of creative pedagogies. If teachers are encouraged to recognise the complexity of such practice, they will be better positioned to deploy their creativity in planning and co-designing the curriculum with their students. p.28*

Beghetto and Kaufman (2014) remind us that developing creativity takes time, influenced by a range of classroom features: physical, pedagogical, psychosocial and there is not a one-size fits all approach. It relates to how practiced a person is in a specific domain. Therefore, teachers should not be finding 'techniques' but ensuring their classroom practice provides the right 'environment' to help not hinder. Teacher beliefs make or break whether creative thinking is helped or hindered by classroom environment. A conducive learning environment is what is needed, not necessarily the putting into practice of new 'techniques'.

They suggest that establishing a creativity supportive learning environment comes about by teachers:

- Incorporating creativity into their everyday teaching
- Providing opportunities for choice, imagination, and exploration
- Monitoring the motivational messages being sent by one's classroom practices
- Approaching creativity and academic learning as means to other ends.
- Modelling and supporting creativity in the classroom.

Classroom practices that are supportive of developing creativity include:

- Explicitly teaching for creative thinking
- Providing opportunities for choice and discovery
- Encouraging students' intrinsic motivation
- Establishing a creativity supportive learning environment
- Providing opportunities for students to use their imagination while learning.

In *Expansive Education* (2013) Lucas et al, identified ten dimensions within which teachers must make pedagogical choices when they are thinking about cultivating creative learning habits at the same time as they are teaching subject content, **Figure 9**.

Neither of the 'ends' of these continua is right or wrong *per se*. Rather they represent the choices that teachers need to make as they consider the desired outcomes of their teaching. In some cases there will be times when a teacher will be wanting to choose methods appropriate to the view described at either 'end', for example in their approach to tasks, working as individuals *and* working in groups.

There are six choices which will find those teaching for creativity to be likely to be nearer the left than the right – attitude to talent, nature of activities, organisation of time, organisation of space, visibility of processes and the role of the teacher.

Creativity, Culture and Education, which has done much to promote CRL's five dimensional model of creativity across the world, has developed the ten dimensional framework above into a model of a high functioning classroom<sup>3</sup>.

### 3.3 Interdisciplinary learning

One feature of teaching and learning potentially relevant to the development of creativity that does not necessarily sit easily in most secondary schools is interdisciplinary learning. Creativity requires knowledge but this knowledge often spans the boundaries of conventional subjects. Ofsted (2003) noted the importance of structuring cross-curricular opportunities to enable creativity to develop.

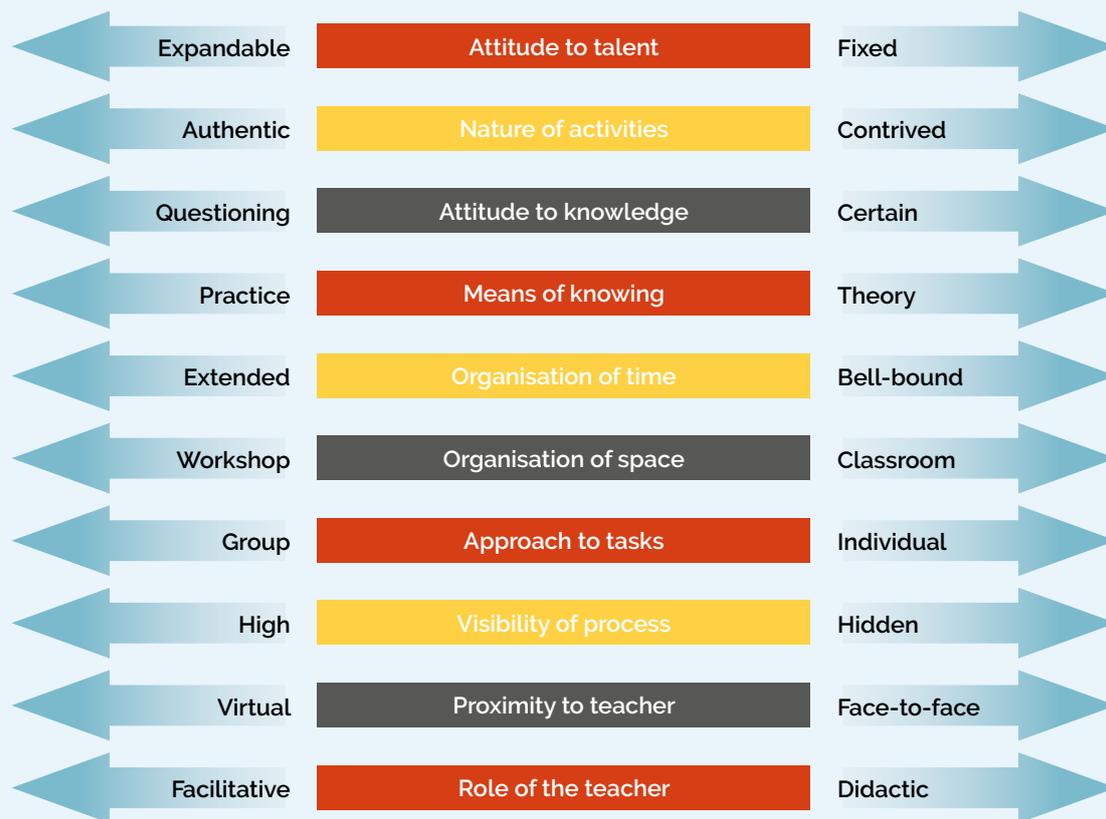
Henriksen (2016) explores the 'transdisciplinary habits of creative teachers' by looking at what award-winning teachers do. She suggests that 'learning to think creatively in one discipline opens the door to creativity in other disciplines'. This 'involves a combination of different types of knowledge' (p. 213), i.e. it assumes a level of domain knowledge in both areas.

Henriksen found a diversity of ways that good teachers (as measured by teaching awards) used each of the skills in their classrooms, and draws some general conclusions about the importance of each skill, for example, that 'embodied thinking was thought to be integral in making learning active and engaging' (p. 224). The research found 'rich, qualitative evidence' overall for the use of these skills in teachers' own creative classroom practices.

The idea of transdisciplinary thinking has implications for pedagogy and, therefore, for creative leaders aiming to develop creativity and creative thinking in learners. It may have implications for how timetables are structured, how faculties are organised and linked, and how space and time are made for transdisciplinary planning if desired.

<sup>3</sup> <https://www.creativitycultureeducation.org/news/creative-learning-summit/>

**Figure 9** A ten-dimensional framework of pedagogical choices (Lucas et al. 2013; p. 136)



Henriksen suggests that 'transdisciplinary thinking' is an effective way of thinking that cuts across disciplinary boundaries, and that research shows that creative thinkers in science use a set of these skills. Her study investigated a possible set for teachers based on work by Root-Bernstein which identified 13 cognitive skills 'used by highly creative thinkers across disciplines' (p. 214).

Leonard et al. (2014), have developed an interdisciplinary framework for creative leadership in dance at secondary school level (see **Figure 10**). Dance is seen as something done to fulfil some other purpose (MacBean, 2014). For Leonard, dance is 'an educational means of exploring curricular content, teaching aesthetics, developing problem-solving skills, building social relationships, synthesizing knowledge, and employing higher order thinking' (p. 87). MacBean details a number of physical exercises that teach learners something about empathy, diversity, assumptions and so forth. There is an underemphasis on dance for its own sake in schools, perhaps, for Leonard, as a reaction to the fact that 'dance is misunderstood due to its association with popularised dance competitions etc...'

The framework incorporates four aspects - an integrated curriculum, collaboration, mentorship and scholarship. While dance is its focus, it is anchored in learning (mentorship), research (scholarship), and shared

initiatives (collaboration). It could easily be adapted and applied to other areas of the curriculum.

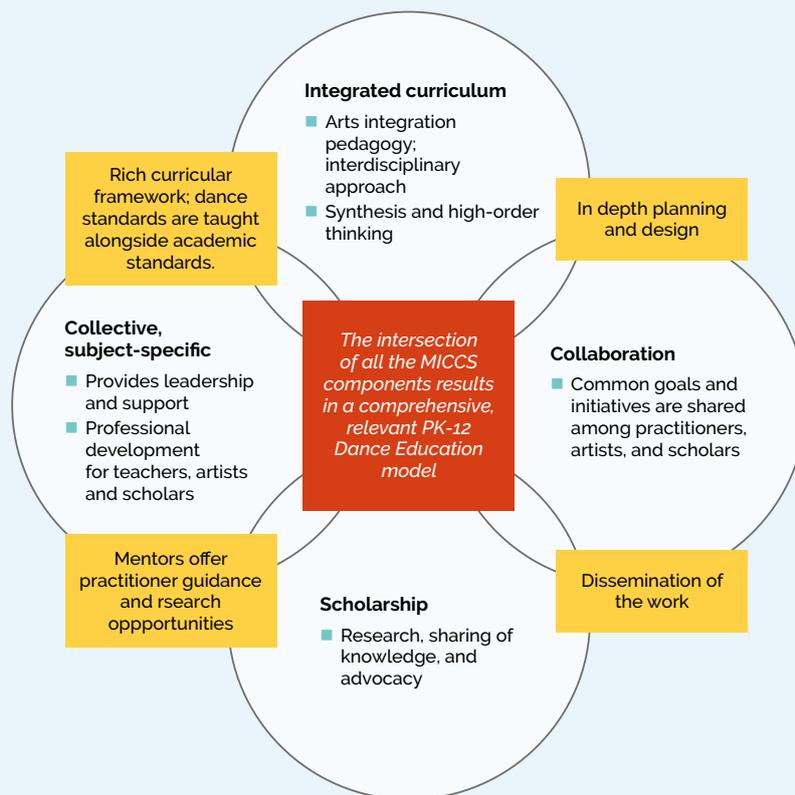
### 3.4 Going beyond the formal curriculum

While ensuring that all young people have opportunities to develop their creativity in lessons is important in terms of equity, for many it will be through the parallel worlds of the co- or extra-curriculum that their creativity is engaged. This argument is well made by Ken Robinson (2009) in *The Element: How finding your passion changes everything*. Robinson sees the 'element' as 'the place where the things we love to do and the things we are good at come together', (p. xiii). Robinson reminds us that creativity is an active form of imagination, one that requires us to take part:

*Creativity is a step beyond imagination because it requires that you actually do something rather than lie around thinking about it. It's very practical process of trying to make something original. It may be a song, a theory, a dress, a short story, a boat or a new sauce for your spaghetti.' p. 71*

Ensuring students have opportunities for creative co-curricular and extra-curricular activity is important because it provides learners with the range of experiences in which they are likely to cultivate their creativity; to find their element.

**Figure 10** Diagram mapping intersections of key components of (1) mentorship, (2) integrated curriculum, (3) collaboration, and (4) scholarship of the creative leadership MICCS model (for P-12 dance education) (Leonard et al., 2014)



Interestingly, while we found very few research-based models of creativity specifically designed for schools we did find one developed for museum learning (Hadani, 2015), **Figure 11**.

The publication in which the model is explored, *Inspiring a Generation to Create: Critical Components of Creativity in Children*, is full of practical ideas as to how each of the seven components can be developed in young people in the informal environment of a museum.

In *Zest for Learning* (Lucas and Spencer, 2020) we describe how schools can develop students' creativity using a wide range of learning methods such as volunteering, performing, travelling away from home, researching, play and games. We call these 'signature learning experiences', the informal version of the signature pedagogies we explored earlier in 4.2. Leaders, we suggest, may like to think about the sorts of 'community or regional organisations that might best help them enrich the experiences they can offer students' (p. 232).

A systematic literature review of creative learning environments in education (Davies et al., 2013) concluded that:

*... taking children and young people out of school to work in environments such as museums and galleries enhances their creative skills.* (p. 87).

### 3.5 Opening up the timetable and the classroom

A small literature explores the specific challenges of developing creativity in secondary schools. There are three obvious ways in which secondary schools are different from primary schools - their size, the fact that they are organised around subject disciplines (more than at primary) and the age of their students. Of these it is the subject organisation that would seem to present logistical challenges.

One consequence of most secondary school timetables is that lessons are relatively short, something that evidence suggests is not necessarily conducive to the development of creativity. Davies et al. (2013), for example, cite work that recommends:

*extended time periods for creative activities, and notes the increased interest and commitment that time can give to the value of creative learning.* (p. 86).

The subject-based organisation of secondary schools brings with it other challenges in terms of the relationships between teachers. Whereas at primary level teachers see themselves as teachers of children, at secondary their identity tends to be defined by their specialism so that they become teachers 'of geography' or 'of art' or 'of science'. Their focus is on what their syllabus requires and this inhibits attempts to plan to

**Figure 11** Bay Area Discovery Museum's 7 Components of Creativity

Components	Description
 <p><b>Imagination &amp; Originality</b> Imagine and explore original ideas</p>	<p>• Creativity involves producing original ideas that are unusual or novel, and it sometimes involves combining two or more different concepts to create a new, synthesized idea. Children express their imagination and original ideas through pretend play and the creation of imaginary companions and make-believe worlds.</p>
 <p><b>Flexibility</b> Maintain openness to unique and novel experiences</p>	<p>• The interaction of intelligence and creativity often begins with the flexible combination and modification of prior concepts or strategies to produce new representations. Children can experience flexibility by seeing from different perspectives, remaining open to new and challenging experiences, or (especially as they become older) gaining awareness of how only seeing from a single perspective can limit their creativity.</p>
 <p><b>Decision Making</b> Make thoughtful choices that support creative efforts</p>	<p>• Discretion, judgment, and decision making play an important role in the development and expression of creativity for children. Decision-making skills require convergent thinking, which is critical to creativity because it allows individuals to refine ideas and to select the best possible answer from the ideas generated to solve a problem.</p>
 <p><b>Communication &amp; Self-Expression</b> Communicate ideas and true self with confidence</p>	<p>• Communicating one's unique perspective plays a vital role in creativity by allowing individuals to express their feelings, ideas, and desires through language, art, and physical movement. A sense of confidence and connection to authentic feelings allows children to express their unique insights and thoughts with others.</p>
 <p><b>Motivation</b> Demonstrate internal motivation to achieve a meaningful goal</p>	<p>• Motivation is at the core of the developmental experience and inspires children to explore and satisfy their curiosity. When individuals are internally motivated, acting without the promise of a reward, they are more creative.</p>
 <p><b>Collaboration</b> Develop social skills that foster creative teamwork</p>	<p>• Collaboration allows for the exchange of ideas among children as they work to find a solution for a problem or project. Working together towards a shared goal fosters perspective-taking and provides a chance for children to explain and expand their thinking in new ways.</p>
 <p><b>Action &amp; Movement</b> Boost creative potential through physical activity</p>	<p>• Exercise and physical activity are associated with better focus, enhanced memory, and greater ability to learn. Action and movement stimulate the building blocks of learning in the brain, and regular exercise can act as a cognitive enhancer to promote creativity.</p>

teach creativity across subjects. It need not always be so, as teachers who have been involved in projects to increase opportunities for teaching for creativity reflect in a study in secondary schools in Australia, the United States, Canada and Singapore (de Bruin and Harris, 2017):

*...time to meet, develop and plan programs, exchange ideas and enact deeper critical and creative activities than what is already catered for was the most precious and rare of commodities. (p. 33).*

One teacher in the study described the benefits of working across disciplines:

*The first thing that dissolves are the barriers between domains; science and maths can be arranged with artistic qualities, music, maths, history and literature and languages also melt together if you allow the dialogue and creative inquiry to take hold. (p. 29).*

One strategy used by some secondary schools is block scheduling with fewer, longer lessons during any week.

While we found little specific research with regard to teaching for creativity it would be reasonable to assume that longer lessons invite and probably require greater variety in pedagogical approaches. One study (Hanover Research, 2014) suggests that:

*Longer class periods give teachers more time to complete lesson plans, develop key concepts, increase the creativity of lessons. (p. 9).*

To accommodate many different subjects in classrooms and workshops many secondary schools find that their teaching spaces are small, something which can inhibit teachers' attempts to teach for creativity, (Davies et al., 2013):

*There is reasonable evidence across a number of studies that the space within a classroom or workshop should be capable of being used flexibly to promote pupils' creativity. (p. 84).*

The implications of a relatively small amount of research is that more flexible times and spaces aid teaching for creativity. Notwithstanding the desirability of a degree of opening up of the timetable, it is perfectly possible for all teachers to make opportunities to teach for creativity in every subject of the curriculum.

### 3.6 Changing the focus of rewards

The new PISA test of creative thinking planned for 2022 (OECD Directorate for Education and Skills, 2019) is already raising interest in the ways in which the creativity of young people can be assessed. But in secondary schools across the world the assessment of creativity and, more broadly, the ways in which student creativity is rewarded and reported on to parents is very much in its infancy.

Our own research has shown that there are many ways in which student progress can be acknowledged and tracked (Spencer et al., 2012; Lucas and Spencer, 2017). Trends in this field include the growing use of digital portfolio, increased sophistication in developing student self-report questionnaires, wider engagement with real-world audiences through the use of exhibitions and performances, and the use of online tests. Often it is possible to integrate assessment into the process of creative learning as Thomson (2011) reminds us:

*Creative learning approaches offer opportunities for students to record and also present their learning in multiple genres and media and to take some ownership of the processes of reflection. (p. 264).*

When the focus of the assessment of creativity is formative, assessment for learning, (Lucas, Claxton and Spencer, 2013) we concluded from field trials of a self-assessment tool that:

*...the primary use of the [assessment] tool is in enabling teachers to become more precise and*

*confident in their teaching of creativity and as a formative tool to enable learners to record and better develop their creativity. (p. 26).*

From earlier sections in this review, it is clear that what is valued or rewarded is a key influence on the culture of a school. So, for example, if mistakes are seen as drafts or prototypes, an inevitable part of the creative process, then the culture is likely to be more conducive to creativity. We explore the leadership implications of this idea in 6.1.

As yet we found very little evidence as to ways of reporting to parents on the development of student creativity or on the effectiveness of different reporting techniques. Common sense would suggest that, were effective reporting methods to be devised this would not only improve parent understanding of the role of creativity in schools but also promote dialogue between home and school about creativity. In those countries where creativity is an explicit and mandated part of their national curriculum, in Australia for example, schools in some States are beginning to be given guidance on effective ways of reporting to parents on the development of their children's creativity (Victorian Curriculum and Assessment Authority, 2015). Globally there is a movement away from numbers and grades towards more nuanced and evidenced descriptions of what learners can do (Lucas, 2021).

### 3.7 Working with partners as a way of being

One of the strongest lessons of the Creative Partnerships initiative (2002-2011) was its emphasis on partnership working with artists and cultural organisations (Parker, 2013):

*The planning processes and partnership approach to delivering projects meant that teachers were engaged with new and different ways of thinking and delivering in relation to their pedagogy. (p. 96).*

In research into the development of zest in schools (Lucas and Spencer, 2020) we have seen similar benefits in the ways staff and students learn when working with a broader range of partners than those in cultural organisations, for example those working in museums, environmental and scientific organisations and groups such as the Scouts. Benefits for students (and teachers) of these kinds of partnership working include the opportunity of spending time with adults with particular learning passions, being genuinely outward facing, encouraging deep research and scholarship, making space for activities which are authentic and extended in length, embracing novelty and leaving space for the unexpected.

While there is a significant literature exploring the ways in which schools can work in partnership, this tends to focus on school improvement (Armstrong, 2015). A notable exception is in an edition of *Art Education* dedicated to creative leadership. In this, Woywod and

Deal, (2016) explored the benefits of bringing community artists into school in an immigrant community in the US. The process helped open up conversations with parents so that children were able to understand and appreciate the lengths their parents had gone to for a better life, and to recognise the differences between their own childhoods and those of their parents. The authors describe the process of 'collaboration between a community-based artist, an interdisciplinary team of teachers, and their students' in a way they believe is replicable. It involved offering the chance for sharing and understanding one another, connecting topics to real people in meaningful ways, and showing learners how artists had made sense of real people's experiences.

The kind of partnership working which evolved from the Creative Partnership initiative in the UK was one of eleven signature pedagogies found to be useful in the study undertaken by the OECD (Vincent-Lancrin et al., 2019, p.77–78), explicitly when combined with the Centre for Real-World Learning's model of creativity.

# 4 Opportunities and challenges for school leaders

In section 3 we outlined what creativity looks like in secondary schools. In this short section we stand back and consider the reality that school leaders face in England when trying to develop creativity and creative thinking in staff and students in the current educational climate in terms of opportunities, challenges and a third category which we are calling 'creative uncertainties'.

In section 5 we bring the whole together by exploring the concept of creative leadership in schools and in section 6 we consider the implications for school leaders of putting these ideas into practice.

Throughout sections 4-6, as well as summarising evidence we indicate issues on which school leaders might like to focus as they combine theory and evidence with their own experience and context.

In our exploration of creativity so far we have focused on the development of creativity in students/pupils, albeit recognising the powerful role teachers have in creating cultures; for the rest of this report we will be more explicitly acknowledging the dynamic interplay between developing creativity for teachers and students across the school community.

## 4.1 Opportunities

Some key initiatives and reports relating to creativity in schools have had varying degrees of impact upon government policy and school practice over the years. The Durham Commission (2019) cites the major ones in its appendices. The Commission takes a positive view that the time is ripe for integrating creativity into schools across the curriculum in England:

*The Commission found compelling evidence for the timeliness of emphasising the importance of creativity in schools today. As we have seen, creativity contributes positively to our identity, our sense of community, to social mobility and to our wellbeing. Employers want creative employees. Schools want to recognise the centrality of creativity in their environments, and across the world increasing numbers of education systems are taking teaching for creativity seriously.*

*While the challenges are numerous, the Commission concludes that the opportunities are there and the rewards for success are great... (2019; p. 49)*

Here we briefly summarise the positive forces for change, drawing largely from arguments we have made in sections 2 and 3. We also indicate potential areas on which school leaders might like to focus at the end of each sub-section.

### 4.1.1 Agreement about what creativity is in schools

Over the last two decades, given particular credibility by the decision of PISA to create a new test of creative thinking in 2022, there is considerable agreement as to what creativity is in schools. As highlighted earlier, the Durham Commission's definitions (2019) of creative thinking and teaching for creativity are particularly helpful:

*Creative thinking: A process through which knowledge, intuition and skills are applied to imagine, express or make something novel or individual in its contexts. Creative thinking is present in all areas of life. It may appear spontaneous, but it can be underpinned by perseverance, experimentation, critical thinking and collaboration.*

*Teaching for creativity: Explicitly using pedagogies and practices that cultivate creativity in young people. (p. 3)*

The Centre for Real-World Learning's five-dimensional model of creativity is in use in more than 30 countries across the world and formed a significant element of the case persuading PISA that the concept was robust enough for one of its international tests to focus on creative thinking in 2021.

➔ Creative leaders may wish to consider the extent to which there is shared understanding of creativity and creative thinking between teachers in their own school.

### 4.1.2 Consensus about the importance of creativity

There is a multi-dimensional consensus about the value of creativity today and, therefore, of its necessary place in schools as we illustrated in 2.1. Arguments can be made from the perspective of enhanced well-being, increased employability, improved economic growth, the need to respond to a fast changing world, global competitiveness and the sense that creativity is in itself a potential force for good.

➔ Creative leaders may wish to explore the extent of consensus about the place for creativity in their own school.

### 4.1.3 Growing understanding of which pedagogies work

For the last 40 years we have been learning about how to teach creativity most effectively as outlined in 3.2. While there is more to understand, the core principles of a shared understanding are in place. We have also learned much about the kinds of school cultures which are conducive to a focus on creativity in schools (see 3.1).

→ Creative leaders may wish to conduct an audit of creative pedagogies in use in their school.

### 4.1.4 Changing patterns of school organisation

When Sir Ken Robinson made his much-watched Technology, Entertainment and Design (TED) talk *Do schools kill creativity?* (Robinson, 2006) he was able to make fun of the idea of schools as post-industrial factories damaging the individuality and creativity of children. The talk is clever, brilliantly delivered but ultimately draws its humour from the ease with which Robinson can generate a believable parody of secondary schools.

But over the last fifteen years it has become increasingly difficult to speak of secondary schools in England as if they were a single entity organised by local authorities. This change has occurred as part of the academisation programme whereby schools have 'opted out' of local authority 'control' and set themselves up as independent academies (Eyles and Machin, 2019). The first academies opened in 2002 and today the majority of secondary schools, often as part of multi-academy trusts (MATs), are academies.

Some MATs have chosen to focus on creativity as a core part of their distinctiveness; the Creative Education Trust<sup>4</sup> is an example. At the same time secondary schools like Thomas Tallis School<sup>5</sup> have decided to make creativity an explicit aspect of their offer.

→ Creative leaders may find it useful to examine their school's literature and promotional material to find where the language of creativity suggests it is part of the school's current offering. They may wish to compare this with other schools' practices.

### 4.1.5 Creativity Collaboratives and the Creativity Exchange

The first and most significant recommendation of the Durham Commission (2019) was the establishment of Creativity Collaboratives:

*A national network of Creativity Collaboratives should be established, in which schools collaborate in establishing and sustaining the conditions required for nurturing creativity in the classroom, across the curriculum. This will involve:*

- A three-year pilot of nine Creativity Collaboratives, one in each of the DfE regions. Evaluation of the pilots should inform the creation of a national Creativity Collaboratives network from 2023.
- Funding for the pilot Creativity Collaboratives from a consortium including DfE, Arts Council and educational trusts. The period of the pilots should be used to explore the possibility of attracting funding from partnerships between DfE, industry and commerce. (p. 18-19).

The first Creativity Collaboratives have now been launched. They will be supported by Creativity Exchange, which will provide resources for teachers and school leaders seeking to prioritise creativity in schools. Although funded by Arts Council England, the Creativity Exchange will explicitly promote creativity as a feature of every subject in the school curriculum and not just of the arts.

→ Creative leaders may wish to look at the environment beyond their school to see what creative leaders in other schools are doing, and how they might collaborate.

## 4.2 Challenges

As well as the inherent complexities of playing a leadership role in any secondary school, there are some specific challenges for leaders seeking to make creativity a focus today. In part these have been articulated in section 3, especially in 3.3 - 3.6, where we explore the kinds of organisational and structural constraints particular to secondary schools.

The challenge of embedding creativity in schools is well illustrated by a quotation from nearly 40 years ago:

*There will be a few teachers who are not familiar with the word 'creativity'. Over the past twenty years it has been used to indicate possible cures for all the ills which bedevil the education system. It has become a very emotive term; a campaigning banner for some and anathema to others. (Foster, 1971; p. 7).*

### 4.2.1 A paradigm shift

What may be apparent from the preceding chapters in this report is that the kind of leadership necessary to make creativity a priority in secondary schools requires considerable innovation if schools are really to transform their practice.

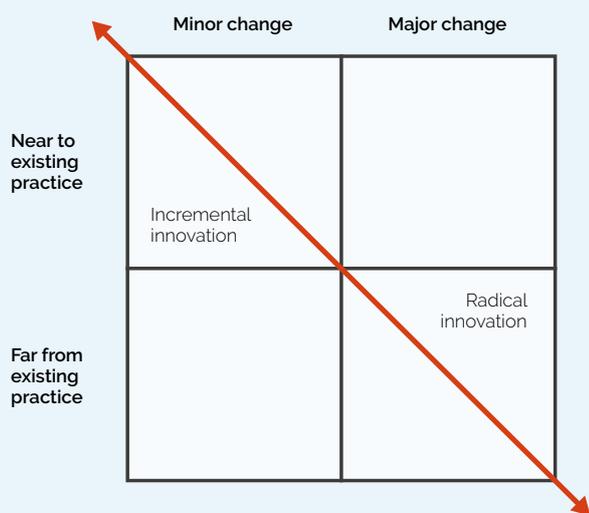
Nearly two decades ago Hargreaves (2003) suggested that it is 'impossible to speak of transformation without the concept of innovation' (p. 27). In education, he argues, innovation means that 'practitioners learn to do things differently in order to do them better' (p. 27). Changes may be radical or incremental and Hargreaves explained the two in terms of what teachers do in

**Figure 12.**

<sup>4</sup> <https://www.creativeeducationtrust.org.uk/>

<sup>5</sup> <https://www.thomastallischool.com/tallis-habits.html>

**Figure 12** The Nature of Innovation  
(Hargreaves, 2003)



Incremental innovation, for example, 'is a minor change that is close to existing practice' while radical innovation 'is a major change that is far from existing practice'. (p. 28). The two axes are continua, so innovation can sit somewhere between radical and incremental.

The paper recognised how many in 2003 saw the existing secondary curriculum as 'seriously out of step with the demands of employment in knowledge economies, where new skills and attitudes are at a premium' (p. 30). Creative thinking would fit very neatly into the example list of skills and attitudes:

*...the ability to learn how to learn and other meta-cognitive or 'thinking' skills; the ability to learn on the job and in teams; the ability to cope with ambiguous situations and unpredictable problems; the ability to communicate well verbally, not just in writing; and the ability to be creative, innovative and entrepreneurial.*

In the intervening years since the Hargreaves paper teachers and school leaders will be familiar with concepts like 'learning to learn' or 'metacognition', 'growth mindset' (Dweck, 2006) 'visible thinking' (Ritchhart, 2004) and the need to develop both knowledge and dispositions such as creativity and critical thinking (World Economic Forum, 2015). Many will have made innovations in the curriculum, bringing in cross-curricula teaching, project-based learning, studio thinking, and the sorts of pedagogies we introduced in section 3.2.

Nevertheless Kampylis and Berki (2014) propose that to nurture creative thinking in students effectively, a major re-think is necessary involving a re-examination of the following:

- What students learn (for example, a diverse range of skills and subject content following their own learning pathways);

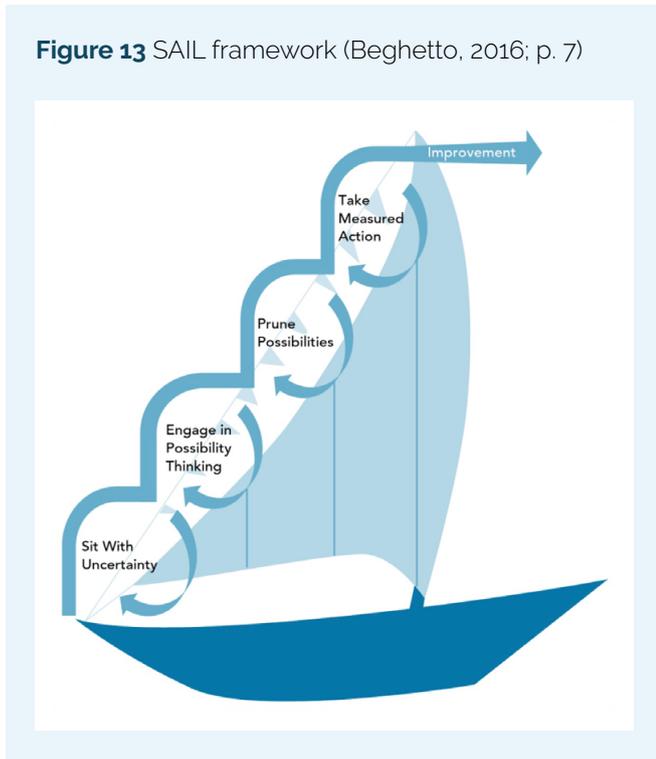
- How they learn (for example, learning approaches and methods such as problem-based learning, constructivism, self-organised learning, instructional design, game-based learning);
- Where they learn (for example, in any location within school buildings: foyers, lounges, common spaces and corridors; home, a youth club, or indeed in the street);
- When they learn (for example, after formal school hours and at any age);
- Who they learn with (for example, not only with teachers and classmates, but also with a range of other people, such as peers, experts, and people near to or far from them, and by themselves with self-organised learning methods, etc.);
- For whom and why they learn (for example, not just for themselves or for future employers, but also for their fellow citizens, society and industry, and for the world as a whole).

By contrast Beghetto (2016) suggests that schools can take a more organic, step by step approach making small changes as they go, **Figure 13**, called The Small-steps Approach to Instructional Leadership (SAIL). (The term 'instructional leadership' is what in England we might refer to as pedagogy or teaching and learning methods.)

While Beghetto uses a term that we note is frequently associated with approaches to teaching and learning that emphasise narrowly construed pupil outcomes (Stoll, 2020), he illustrates this framework with four principles which suggest a broader approach:

1. *Sit with uncertainty.* This is the stage where an issue has been identified but no solutions are yet found. So, for example, a maths teacher might be wondering how to create opportunities for imagination and curiosity. The advice here is not to rush to answers but to take time planning.
2. *Engage with possibility thinking.* Possibility thinking, an idea from Anna Craft's research (2010) in which she suggests teachers move from 'what is' to 'what might be'. It's an opportunity to come up with more ideas and possible solutions than you will end up using. In the maths example above a teacher might consider the idea of letting pupils plan a lesson to bring a mathematical concept alive in the most imaginative way.
3. *Prune possibilities.* It's a misunderstanding of creativity, Beghetto reminds us, that criticism or critique, when done appropriately detract from creativity. He suggests helpful ground rules such as taking time, focusing on ideas not people, remaining open, being specific and constructive.
4. *Take measured action.* Here Beghetto suggests teachers take modest steps with a number of do-able milestones. By 'measured' he means having some simple ways of tracking the progress of pupils' creativity.

**Figure 13** SAIL framework (Beghetto, 2016; p. 7)



→ Creative leaders may wish to conduct an exercise to consider the changes they could adopt for their school, and to position these on the Hargreaves matrix.

#### 4.2.2 Some frequently articulated concerns

To bring the challenges facing school leaders together here in ways which do not simply repeat earlier sections we have expressed them as if they were the voice of a staff member arguing against teaching for creativity. The following critiques and their possible responses are illustrative.

##### *Developing creativity distracts from exam results*

Simply put, teaching for academic knowledge and creative thinking are not mutually exclusive. Indeed there is some evidence that teaching for creativity may actually improve achievement studies (Gajda et al., 2016; Abrami et al., 2015; Higgins et al., 2005) as we saw in 1.2.4.

##### *The syllabus doesn't leave room for focusing on creativity*

For as long as creativity is seen as either antithetical to knowledge or existing only as an abstract concept, this concern will seem to have validity. But in fact creativity and its associated skills and habits of mind sit well in every subject of the curriculum. The idea of 'split screen' teaching (Lucas and Claxton, 2010; Lucas and Spencer, 2017) offers a model whereby teachers can picture their lesson planning and teaching as having a split screen; on one side of the 'screen' is an aspect of the subject syllabus, say, for example, the First World War, while on the other side of the 'screen' could be in this example, say, the use of imagination to understand life in the

trenches from the many different perspectives of those fighting.

*This sounds like progressive ideology; what about subject knowledge?*

This line of thinking is understandable but flawed as we explored in section 1.2.5. Framing creativity as an alternative to knowledge, we suggest, has not been helped by a tendency to position creativity as one of a set of twenty-first century skills (Lucas, 2019). For in so doing creativity can seem to be something of a crusade and lacking in evidence. Whether creativity is a progressive idea or not will depend on the perspective of individuals, some liking the association, others not. The fact that the case for creativity can be drawn from so many points of view, see section 2, is a helpful counter-argument to this concern.

*Can't we teach creativity as a stand-alone topic?*

Some teachers may not like the idea of embedding creative thinking and prefer somebody teaches it as part of PSHE or tutor time. While we know that both explicit and embedded instructional approaches develop thinking (Marin and Halpern, 2011), we know also that earlier attempts to teach creative thinking skills in schools were more successful when they were embedded in subjects (McGuinness, 1999).

*We don't know how to assess creativity*

The fact that PISA will assess creative thinking in 2021 rather undermines this understandable concern. While it is certainly true that there is much to learn on this topic, there are many promising practices, some of which we explore later in 6.1.4 in more detail.

*Parents won't like it; they have high expectations*

The fact that high-profile organisations like the OECD and PISA are increasingly highlighting the need for creativity alongside bodies like the World Economic Forum is creating a positive external context. Providing school leaders can marshal the kinds of arguments used throughout this report it is more likely that parents will see creativity as a good thing for their children. The development of capabilities is vital for children, both for their academic achievement and for life and work beyond school.

*We're doing it already*

This is true for an important minority (Durham Commission, 2019). But equally it is classically used as a counter-argument by teachers who hope that, by appearing to agree with a suggested course of action, they can actually carry on exactly as they did beforehand and a 'new idea' will just go away and leave them in peace!

→ Creative leaders may wish to collate the concerns and questions that teachers have and consider how they can address them.

## 4.3 Creative uncertainties

We are uncertain as to the impact of two factors, the relatively new Ofsted framework and the effects of Covid-19; each might be a force for change or a restraining influence.

### 4.3.1 Ofsted

The Durham Commission regards Ofsted's new framework for inspection as a positive step, that 'could offer new freedoms to schools looking to embed creativity within their policies and practices' (2019; p. 51). We are uncertain as to whether the continuing focus on examination results at 16+ will foster or hinder the development of creativity.

### 4.3.2 Covid-19

The impact of the pandemic on schools has been dramatic and sudden in terms of the development of blended learning and blended professional development. At an existential level it is offering schools a chance to stop and reflect on what they might like to do differently. The Learning from Lockdown website<sup>6</sup> is a manifestation of this line of thinking.

- Creative leaders may wish to conduct a SWOT (strengths, weaknesses, opportunities, threats) analysis, or similar, to consider the factors that provide opportunities and challenges in their own school environment.

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<sup>6</sup> <https://bigeducation.org/learning-from-lockdown/>

# 5 Reimagining leading for creativity in schools as creative leadership

Our review of the literature suggests that we need to reimagine the kind of leadership that will develop creative students (and creative staff) at a theoretical level, as well as clarifying the practical implications for leaders' practices.

We call this reimagined kind of leadership 'creative leadership'.

In this section we explore the concept at a theoretical level and, in the final section, we suggest some ways in which such creative leadership might manifest itself in secondary schools.

The idea of creative leadership connects two seams of thinking in schools with which the authors have been involved over the last two decades, one about leading, creativity and capacity for learning (Stoll and Temperley, 2009; OECD, 2016; Stoll and Kools, 2017; Stoll, 2020) and the other about creativity and learning in and beyond school (Claxton and Lucas, 2007; Lucas et al., 2013; Lucas and Spencer, 2017)

In reflecting on what it takes to create capacity for learning in schools, Stoll (2020) suggests that:

*Creative leadership learning will also support them [school leaders] in exploring and developing conditions in which colleagues feel able to take risks, inquire into stubborn problems, explore potential learning strategies, experiment, innovate, fail and use failure for learning. (p. 427)*

In other words such leadership will explicitly seek to cultivate many of the Centre for Real-World Learning's five creative habits in staff, (Figure 2, page 6), who will then, it seems likely, model these with their students.

Claxton and Lucas (2007) draw on research from a wide range of fields to make a distinction between organisations which are 'creatogenic', actively encouraging creativity at all levels, and those which are 'creatocidal', actively, albeit sometimes unintentionally, discouraging or stunting the creativity of those within them. Like Stoll, Claxton and Lucas have long been interested in leadership for what Claxton calls 'learning power' (Claxton, 2011).

## 5.1 The school as a creative organisation

The OECD (2016) has encapsulated much of our combined thinking above in a model of school as a

learning organisation developed by one of us with a colleague (Kools and Stoll, 2016). Taking their definition of a learning organisation as:

*...a place where the beliefs, values and norms of employees are brought to bear in support of sustained learning; where a "learning atmosphere", "learning culture" or "learning climate" is nurtured; and where "learning to learn" is essential for everyone involved. (OECD, 2016; p. i)*

This definition is visualised as an integrated model, **Figure 14**.

The model focuses on:

- developing and sharing a vision centred on the learning of all students
- creating and supporting continuous learning opportunities for all staff
- promoting team learning and collaboration among all staff
- establishing a culture of inquiry, innovation and exploration
- embedding systems for collecting and exchanging knowledge and learning
- learning with and from the external environment and larger learning system, and
- modelling and growing learning leadership.

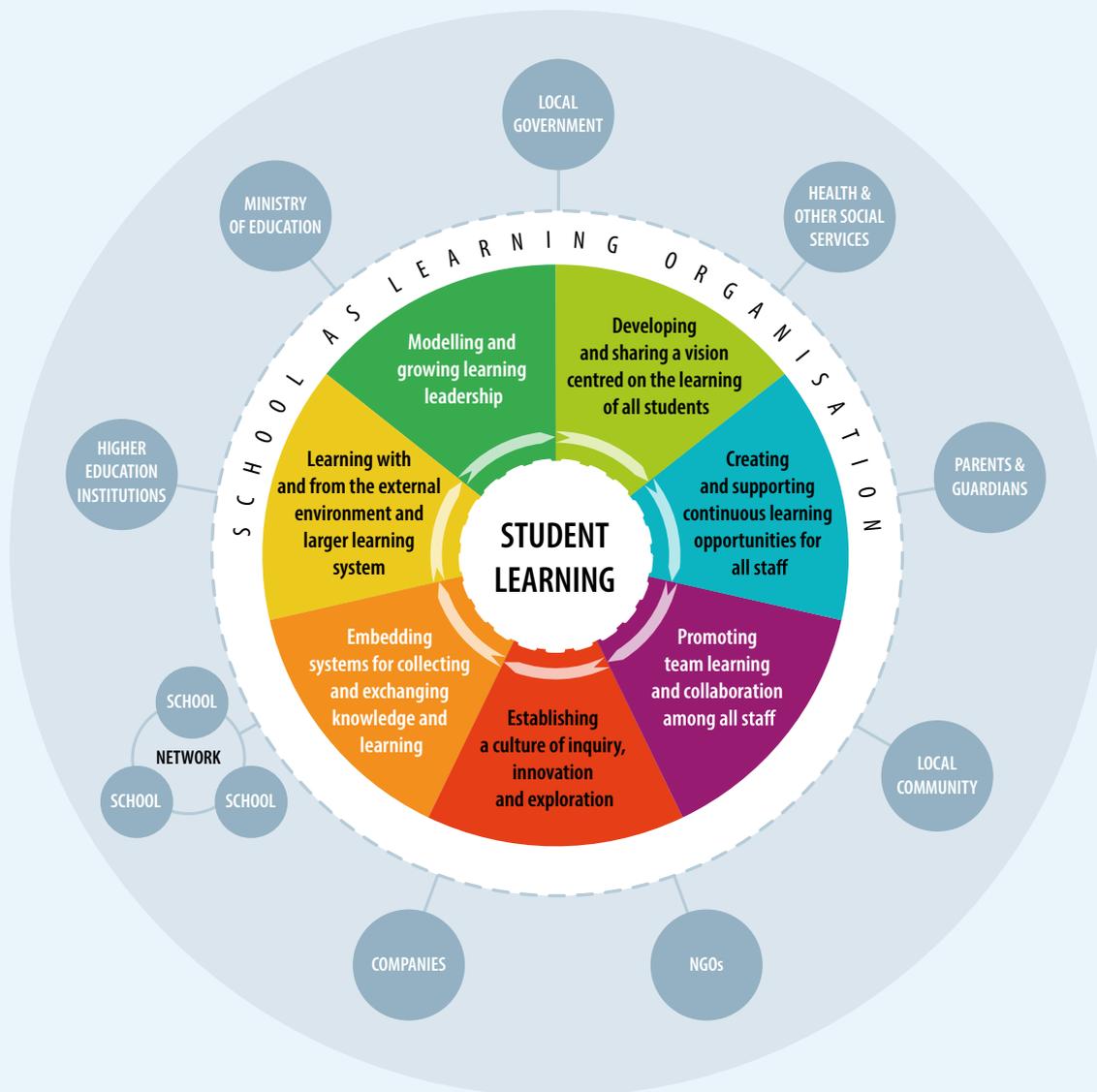
Substitute the word 'learning' in several of these sentences with the word 'creativity' or 'creative' and the connections between learning and creativity suddenly become much clearer; the model becomes a useful visualisation of the school as a creative organisation.

The framing of a school as learning or creative organisation connects with the idea of 'learning leadership'. In the OECD's *Leadership for 21<sup>st</sup> Century Learning* Istance and Stoll (2013) describe learning leadership as

*...actively contributing to the design, implementation and sustainability of powerful learning environments through distributed, connected activity and relationships (p. 13).*

The authors recognise that leadership occurs at many levels and may be hierarchical, or dispersed (p. 37), but learning leadership:

**Figure 14** School as a learning organisation, (OECD, 2016)



...frequently involves adaptive challenges, requiring responses that go beyond leaders' current repertoires (p. 23, citing Heifetz and Linsky, 2002).

...it calls on leaders to be creative, thinking differently, and taking risks as they push themselves out of their comfort zones and experiment with developing and implementing new designs and encouraging others to do the same without fear of failure (p. 23, citing Stoll and Temperley, 2009).

→ Creative leaders could carry out an inventory of the extent to which their own school acts as a creative organisation.

## 5.2 Creative leadership

From our reading of the literature, both from scholarly and 'grey' sources, creative leadership is the term we believe best encapsulates a kind of school leadership that explicitly develops the creativity of

all of its members, staff and students alike. Creative leaders ensure that there are multiple opportunities for developing the creativity of all young people while at the same time recognising that for a school truly to be a creative organisation then developing the creativity of its leaders and staff is important both as a means to an end and as an end in itself.

As we noted at the outset, we have found only a small amount of research explicitly exploring leadership for creativity in schools and a very slightly larger literature using the phrase 'creative leadership'. An academic database search for 'creative leadership' returned 288 papers; limiting the search to 'leadership for creativity', our starting point for this review, returned just 23.

### 5.2.1 Creative leadership as a special form of pedagogical leadership

Stoll and Temperley (2009) suggest that creative leadership:

*...is about seeing, thinking and doing things differently in order to improve the life chances of all students. Creative leaders also provide the conditions, environment and opportunities for others to be creative.' (p. 66).*

The origins of this earlier work lay in their concern that any curriculum and pedagogies designed to offer a necessary set of broader student outcomes would require practice change, agency and creativity on the part of teachers too.

Our own and other research on schools in England highlighted a culture of teacher dependency - "Just tell us what to do", (Earl et al., 2002; Stoll et al., 2003). The decision to focus on leadership was influenced by international research demonstrating that leadership can make an important difference to pupils' learning, mainly indirectly through creating the culture and conditions in which the quality of teaching and learning is enhanced, (e.g. Leithwood et al., 2006).

Thompson (2011) has questioned whether creative leadership is a helpful term when she suggests that there is an existing one, pedagogical leadership. Thomson's paper on creative leadership observes that 'categories of leadership are continually being invented.' (p. 249). She lists those emerging from the business leadership field:

*transformational, transactional, strategic, charismatic, paternalistic, bureaucratic, situational, operational, participative, democratic, servant, autocratic, laissez-faire, effective, adaptive, evolutionary, background leadership (p. 249).*

and adds that educational leadership scholars have added more: 'distributed, teacher, system and community leadership.'

Creative leadership, she suggests, is another, which she came across by chance. Her subsequent search on the term yielded very few papers, suggesting 'it is either an emergent category or a fleeting one.'

One of the papers Thomson includes in her critique is a short theoretical piece by Harris (2009). In it Harris argues, along the lines of Claxton and Lucas (2007), that:

*Those in formal leadership can release or suppress creativity. Organisational cultures, structures and climates vary. Those in formal leadership roles influence and shape school cultures, structures and climates for good or ill. Not everyone wants to encourage creativity. Creativity can be seen as a distraction, an irritation, a detour from a well thought-out and carefully conceived plan. One of the greatest threats to creativity is conformist leadership practice in our schools. (p. 10).*

In this Harris expands the extent of the leadership challenge beyond pedagogical leadership with her delineation of the different roles required and especially

in her description of the potential for creative detours from carefully made plans.

Thomson's overall argument is that what is needed from leaders is pedagogical leadership and not some new category; we welcome her reflective commentary but are clear from the evidence we have reviewed in this report that creative leadership is a special kind of pedagogical leadership, a bigger concept.

### 5.2.2 Creative leadership is used to mean different things

Of course the phrase 'creative leadership' is open to different interpretations. For example, MacBean (2014; p. 117) writes, from a dance education perspective, that creative leadership in education 'can mean many things.' An editorial on creative leadership in the journal *Art Education* has an unhelpfully vague definition of creative leadership:

*'... a catalyst for collective and cultural achievement - a form of swarm intelligence' ... generating a continuum of creative activity that allows us to adapt, connect, relate... so that we are all less alone...' (Rolling, 2016, p. 5).*

In *Creative Leadership* (2016) Keamy sees creativity in school as both teachers *teaching* it, and teachers *being creative* in how they do their work. Keamy suggests that the two are linked and provides a helpful discussion of the mechanism by which this happens:

*In [Stoll and Temperley's] definition, there are parallels with the interrelationship between creative teaching, or teaching creatively, and teaching for creativity, described by Jeffrey and Craft (2004): 'The former is inherent in the latter and the former often leads directly to the latter' ... They explain how the interaction between the two is contextually driven and may happen iteratively and even spontaneously, as learners model their responses on how their teachers teach. Similarly, perhaps, school leaders may simultaneously lead creatively and lead for creativity; they both influence, and are influenced by, the creative responses in the school. (p. 153).*

While Keamy's emphasis is on the importance of principals having pedagogic vision and facilitating good pedagogy, the paper tends to equate good pedagogy with 'promoting creativity'.

### 5.2.3 Creative leadership could be better defined in education

As we have seen the area of creative leadership is underdeveloped in education. For example, one of us found that at the time she and her colleague began their research that 'there were no well-known definitions of creative leadership in education.' (Stoll and Temperley, 2009, p. 66).

This lack of clarity becomes clear when extending the search beyond education into fields that have arrived

at substantially more consensus and worked through theories. Mumford et al. (2002) tell us that since the 1950s, 'scholars from a number of disciplines' including engineering, the sciences, marketing, psychology, and management 'have sought an understanding about how one should go about leading creative people.' (p. 737). Writers in the education field have yet to catch up.

A couple of papers use 'creative leadership' quite differently from the sense of leading for the development of creativity in children. Henley (2014), in the area of dance education uses it in the sense of learners needing to develop it through innovation and initiative. Lemos and Liberali (2019) study an intervention in Brazil to solve a flooding issue. Creativity in this case is seen as finding solutions to complex problems within an educational, and not necessarily classroom, setting. The word 'creative' is used in the title in the sense of their being a 'creative chain of activities [which] is a key theoretical framework for promoting critical collaboration in order to cross the boundaries of educational management organization.' (p. 1,718).

Leonard et al. (2014), whose framework we looked at in our discussion of interdisciplinary learning in section 3.3 uses the term 'creative leadership' in an explicitly arts-based sense. The authors' framework itself is seen as 'a form of creative leadership, [whose goal is] merging creative arts and educational pursuits through dance' (p.87). Similarly: 'Creative leadership in the field of dance education involves the merger of multiple roles and multiple layers of pedagogy.' (p. 90).

Also from the discipline of dance, in an editorial for an issue of *Journal of Dance Education* Schupp (2014) asserts that creative leaders:

*...possess the characteristics of imagination, contextualized line of inquiry formulation, and flexible thinking. They trust their intuition, are empathetic and self-aware, can reconcile divergent perspectives, and persevere. Their dexterity in visualizing and enacting uncommon solutions to emerging problems stems from the capacity to use the full range of intelligences when interacting with the world.* (p. 85).

These are, by implication, the leaders who will help 'develop each student's creative potential as part of a complete education' (p. 85). Thus, creative leadership is ultimately for pupil creativity.

#### 5.2.4 Creative leadership for a range of creative outcomes

In Stoll and Temperley (2009), the definitions that leaders, teachers, and support staff gave related to making a positive difference in terms of raising achievement and maximising learning potential. They also related to leaders demonstrating what we might call creative thinking dispositions: taking risks and looking for opportunities, for example. Less commonly, it was associated by participants with empowering others to

'develop their own capacity in leading'. Fewer still were comments that related to 'finding new and exciting ways of learning to give students more interest'.

In Lowe's (2010) piece on *Effective leadership of creative colleagues*, it is difficult to ascertain what the creative leadership is *for*. Lowe looks at what headteachers do to enable teachers to take on creative initiatives or projects. It is not made explicit whether initiatives are about developing young people's creativity specifically, because generic phrases like 'creativity in our schools' and 'climate of genuine creativity' seem to be the paper's description of desired outcomes (p. 69).

Having said this, Lowe's statement that:

*It is not a question of 'creative leadership' but more to do with the leadership of creativity and creative colleagues.* (p. 69).

implies quite clearly that 'creative leadership' is not understood here as doing leadership in a creative way, but about developing creativity in others.

Thomson (2011) does the same thing, stating (in a paper that is clearly about developing creativity *in* pupils):

*creative leadership is not the same as leading for creativity in and as learning.* (p. 266).

We argue that 'creative leadership' is exactly the term needed to describe the 'leadership of creativity and of creative colleagues and of creative students'. The phrase creative leadership as we are using it includes leaders both being creative themselves, and providing the conditions and opportunities for others to be creative.

#### 5.2.5 Creative leadership for pupils' creativity, but through teachers

Outside of education an extensive literature review in management studies (Mainemelis et al., (2015) synthesises a 'dispersed body of knowledge' into a 'global construct of creative leadership'. Like education, the 'various streams' of research have

*...examined the relationship between creativity and leadership, albeit using slightly different names such as 'creative leadership', 'leading for creativity and innovation,' and 'managing creatives.'* (p. 393).

The creative leadership concept 'refers to leading others towards the attainment of creative outcome.' (p. 400).

Keamy (2016) makes the insightful comparison between, on the one hand, two aspects of creative leadership (leading creatively and leading *for* creativity) and, on the other, the interrelationship between *creative teaching*, or *teaching creatively*, and *teaching for creativity*. Citing Jeffrey and Craft (2004) who had argued that 'the former is inherent in the latter and the former often leads directly to the latter', Keamy argues that the same might apply here: 'perhaps, school leaders may simultaneously lead creatively and lead for creativity;

they both influence, and are influenced by, the creative process in the school' (p. 153). We know that leaders influence learners. Keamy suggests that the perspective of 'creative leadership', as defined in Stoll and Temperley (2009), is a useful one for clarifying the discussion about the role of leaders in teaching and learning. He draws together arguments from other sources to assert the strong influence school leaders have upon teaching and learning; particularly by creating the climate and sustaining the learning conditions in which quality teaching and good learning happen (p. 153).

Leithwood et al. (2020) revisited their earlier published assertions about successful school leadership (Leithwood et al, 2006), revising older claims about leadership in light of more recent evidence. Their newer research rebuffs an old assertion that there is very limited evidence about the positive impact of leadership and reasserts their first claim, that school leadership is second only to classroom teaching as an influence on pupil learning.

There is, we conclude, a growing consensus that leaders impact upon the learning of students in a variety of ways and, in our final section, we explore the specific activities which 'creative leaders' do to effect this.

- Creative leaders might examine their own thoughts about how creative leadership is different from, or similar to, pedagogical leadership.

# 6 Creative leadership in practice

Thus far we have charted the establishment of a robust definition of creativity in schools, summarised the case for its importance today, illustrated what it looks like in secondary schools, analysed the opportunities and challenges that secondary school leaders face if they truly wish to focus on developing the creativity of their students and suggested that the phrase 'creative leadership' in its broadest sense is a helpful one to capture the essence of school leaders' role.

In the last part of this argument we have recognised the strong overlap between the idea of a school as a learning organisation and the school as a creative organisation. In particular, we propose that there is growing evidence to suggest that, while it is possible to identify some specific methods which underpin leadership for creativity (or teaching for creativity at the classroom level), the mindset shift needed to create the conditions in which student creativity will flourish requires a similar mindset change among leaders and their staff as well if it is to be effective.

A conventional definition of educational leadership (Robinson, 2009) is that it

*...causes others to do things that can be expected to improve educational outcomes for students. (p. 70).*

But as Sternberg (2005) has suggested, effective *creative* educational leadership means something in addition to this. It requires leaders to have the 'creative skills and attitudes' which are essential for generating 'the ideas that others will follow' (p. 348).

It is an interesting question as to whether some school leaders are more temperamentally suited to creative leadership. To date there is a gap in knowledge about the personal attributes of school leaders who value creativity. Leithwood et al. (2020) suggest that even in terms of the traits of school leaders in general, there is 'only modest amounts of research' (p. 10), and research into traits is of 'quite limited value' because there are other 'qualities' that may contribute more to effective leadership practice. There is some evidence to suggest that:

*...the most successful school leaders are open-minded and ready to learn from others. They are also flexible rather than dogmatic in their thinking within a system of core values, persistent (e.g. in pursuit of high expectations of staff motivation, commitment, learning and achievement for all), resilient and optimistic. (p. 10)*

This review found indications of a number of things that creative leaders do or need to consider which we summarise in this section.

## 6.1 An agenda for change

We have described a growing global consensus about what creativity can look like in schools and why it matters. We have also made clear the gap between international aspirations and current education policy in England. This gap provides a clear incentive for school leaders to change their practices.

### 6.1.1 Set a creative tone

One of the most important jobs of a school leader is to set goals and expectations. Effective goal setting requires leaders to:

- establish the importance of the goals;
- ensure that the goals are clear;
- develop staff commitment to the goals. (Robinson et al., 2015).

In terms of this review the overarching goal has been to improve opportunities for all students to develop their creativity. Sections 2-3 of this report offer a clear definition of creativity and an overview of its importance. Sections 4-5 help to clarify the goal of cultivating creativity in secondary school students by describing its cultural and structural implications and suggesting some of the means by which staff's commitment can be achieved.

Our (Stoll and Temperley, 2009) R&D project specifically sought to help senior leadership teams 'explore and develop their capacity to create the conditions, culture and structures in which learning-focused innovation and creativity best thrive.' (p. 69). As we saw in section 6, while enhancing student learning is the end goal, it is the 'creativity of colleagues' that is being nurtured. The research identified nine conditions 'that creative leaders appear to need to work towards in their school to promote and nurture creativity in others' (with 'others' being 'colleagues'):

1. Model creativity and risk-taking;
2. Stimulate a sense of urgency – if necessary, generate a 'crisis!' – 'it often takes a crisis to promote action where there is inertia.' (p.70);
3. Expose colleagues to new thinking and experiences;

4. Self-consciously relinquish control – ‘creating an ethos that it’s acceptable to take risks, and being given the freedom to explore without constraints’ (p.71);
5. Provide time and space and facilitate the practicalities;
6. Promote individual and collaborative creative thinking and design;
7. Set high expectations about the degree of creativity – ‘By setting the bar high and pushing people to be imaginative and to think originally, leaders appear to create a bigger space for colleagues to grow into.’ (p.73);
8. Use failure as a learning opportunity;
9. Keep referring back to core values.

From Lowe (2010) it is possible to make some more detailed observations about the role of the headteacher in terms of what we are calling ‘setting the tone’:

- Inspiring staff. One head commented that they needed to be seen having creative skills to enable staff to ‘feel safe’ with being creative (p. 70). Comments suggested that headteachers do not need to be the ‘trailblazer’ but to inspire others to be creative: ‘teachers appreciate heads who know their limitations’ (p. 70).
- Accountability. Standards still need to be met. ‘Teachers need confidence in the permission they are given’ (p. 70).
- Leading. The head may need to be the one ‘relied upon to move creative projects forward’.
- Hierarchy. Heads often saw less hierarchy than teachers perceived.
- Communication. There was disagreement over whether creative teachers were rewarded or not, with heads reporting that they were recognised, and teachers thinking less so (p. 71).
- Risk. Deciding on how much risk is to be supported (p. 71). Risk relates less to students’ grades, and to staffing issues such as ‘different workload expectations for colleagues immersed in innovative work’ (p. 73).
- Flexibility. The School Improvement Plans should allow for change emerging from creative challenges so that the school does not drift in its focus.
- Outward looking. Monitoring other schools’ work seemed to be common (p. 72).
- Fast feedback. The speed of feedback on the success or otherwise of creative projects was a clear indicator of ‘creative projects having a good level of priority.’ (p72).

Phimkoh et al. (2015) looked at the implementation of a programme to improve the ‘creative leadership’ of school administrators. Three ‘main factors for creative leadership’ were identified (p. 84) along with nine sub-level ‘indicators’ (or ‘minor elements of human behaviour’

that indicate flexibility, imagination, and vision) in order of importance (p. 90):

1. Flexibility - indicators: ability to find answers independently without being restricted to customary regulations, ability to adjust to various situations, having openness for new ideas
2. Imagination - indicators: creative thinking, humour in working, creative problem-solving ability
3. Vision - indicators: vision building, vision distributing, vision implementing

Interestingly, much of what we have discussed here has been known for two decades. Following a review of the national curriculum in 2000 that emphasised creativity as an important aim, the Secretary of State for Education and Skills asked QCA (Qualifications and Curriculum Authority) to investigate how schools can promote creativity through the national curriculum. The QCA (2004) report *Creativity: Find it, promote it* summarises the findings, explaining how schools can promote creative thinking across the curriculum for Key Stages 1-3. The report accompanied materials available on the *Creativity: find it, promote it* website. The report lays out seven key steps for leaders (p. 16).

1. Value creativity as a school
2. Encourage professional learning and development
3. Build partnerships to enrich learning
4. Provide opportunities for pupils to work with creative people
5. Provide a stimulating physical environment
6. Manage time effectively
7. Celebrate pupils’ creativity.

Mumford et al. (2002) albeit from outside of education, find a number of conceptions of creative leadership that we might put in the general category of ‘setting the tone’:

- The leader’s technical expertise and creativity is strongly related to followers’ creative performance. (p. 737).
- Leaders’ behaviours (providing intellectual stimulation, support, and involvement) condition whether people can express their creative capacity. (p. 738).
- The role of the leader is to support or facilitate others’ creative work. They must acquire resources and encourage idea generation.
- Leaders also evaluate ideas, integrate ideas with the organisation’s needs, and create conditions for idea generation.
- Leaders inspire followers with a meaningful, motivating vision of the work and its implications (notwithstanding the point that imposition of an external vision can inhibit performance of intrinsically motivated individuals).

- Leaders' technical skills are a powerful influence on follower performance; not least for purposes of evaluation.
- Leaders build support for risky new ventures, and create a climate of support for idea generation.

Although the authors' review does not allow them to present a 'grand theory' of creative leadership, they suggest that

*...leadership of creative efforts seems to call for an integrative style – a style that permits the leader to orchestrate expertise, people, and relationships in such a way as to bring new ideas into being.* (p. 738).

This integrative style 'seems' to involve three elements:

1. Idea generation – facilitating; intellectual stimulation; applying creative problem solving techniques.
2. Idea structuring – setting expectations; guidance.
3. Idea promotion – gathering support; implementation of ideas. (p. 739).

The actions required for each of these elements cannot happen simultaneously.

Sisk (2001) identified four strategies for enhancing creative leadership and characterised these as:

1. Focusing: 'leaders report that they initiate focus or purpose through mentoring or influencing people. They state that they achieve this focus or purpose in themselves and then encourage others to release their creative energy toward desired outcomes.' (p.283).
2. Empowering: 'leaders stress that they empower others through trust relationships, facilitation of whole-brain thinking, development of shared purposes and clarification of mutual values'. (p. 284).
3. Transforming: leaders 'describe leadership behavior as removing or overcoming barriers to seek opportunities, support meaningful human interaction and foster individual and organizational transformation through a team orientation. The leaders avoid coercion and control to enable creative expression and cooperative activities to emerge' (p. 284).
4. Facilitating: this 'is described as a process that involves all of the senses to gather feedback to verify the effect of previous activities and events.' (p. 285).

Despite the difference in context, the findings are then applied to education. Sisk argues that to initiate change in schools, leaders need to 'revitalise' the school as a workplace by engaging in certain creative management behaviours. These include:

1. Involving teachers in decisions and meeting regularly with them face-to-face;
2. Giving feedback to teachers on their performance, ensuring that this is based on a checklist of shared behaviours and results;

3. Making positive reinforcement a priority 'at every level of the school district' (p. 287).

As we saw in 4.2.1 leaders' approach to creative leadership can require a fundamental change in tone or a more incremental one depending on the context and character of the school and its staff.

Closely allied to tone setting is the modelling of certain mindsets. Smith and Henriksen (2016; p. 7) describe a 'pedagogical philosophy of embracing failure in order to encourage creativity'. Based on her own experience of teaching school teachers (US grades K-12) within the area of technology at a graduate school, Smith quotes one of her trainee teachers at the end of the course as recognising now that 'failure is an option'.

The authors expand on this to suggest that 'perhaps, if we want to improve creative outcomes in the classroom – failure is, possibly, the *only* option.' (p. 11). Their suggested approach to a pedagogy of embracing failure has three themes:

1. Nurturing a growth mindset
2. Playing with mistakes
3. Embracing ambiguity.

To assist student teachers with their own formative self-assessment, Smith introduced weekly reflective blog writing. Notably the incorporation of multimedia reflections within those blogs was a clever chance for the course teacher 'to model ways of valuing that the learners' process is equally as meaningful as the end product itself.' (p. 9). Creative leaders can make great use of the modelling process within development.

The role of creative leaders as role models is an important area about which we do not yet have enough evidence. In the context of student behaviour Dix (2017) argues that students do what they *see* not what they are *told to do*. So if they see consistently kind teachers, they are likely to be kind, too. There would seem to be a reasonable likelihood that the behaviours of school leaders will be similarly powerful in terms of their impact on creativity.

Of course all of the tone setting in 6.1.1 has audiences beyond school staff and students such as parents, employers and other local/regional bodies.

➔ Creative leaders could examine how a creative tone is set within their own school: whether goals are clear and linked to creativity; whether there is modelling of creativity from leaders and from teachers; how failure is treated, for example.

### 6.1.2 Resource for creativity

With any change in schools there will always be resource issues of time, skills and money. The BritainThinks survey for the Durham Commission showed that while headteachers and school governors value creativity, with 99% agreeing that it is important

to support creativity and creative thinking in schools (BritainThinks, 2019), there was the perception that it could easily be side-lined through other pressures such as shortage of resources, both human and financial, particularly in schools in less advantaged areas.

There are some particular resource issues in secondary schools which leaders will need to attend to and these are primarily time issues - creating time for potential interdisciplinary teaching collaboration and, in parallel, making time available for staff to plan lessons together.

Harris and de Bruin (2018) articulate teachers' worries clearly:

*An aspect of concern to some teachers was the timetabling constraints that severely limited some teachers' physical abilities to collaborate in inter- or trans-disciplinary ways across domains. Routine scheduled blocking of all arts subjects together, as were maths and sciences, limited significantly the ability, for example, of maths and music classes to join together. To these fundamental, organizational ends, creative school environments are fostered by principals who adopt approaches that are 'glass half full', that encourage working from within to try to build staff capacity that grows its own confidence among those who seize opportunities. p.225*

Bocconi et al. (2012) makes some helpful suggestions for schools as they think about organising their curricula:

- Introduce less extensive curricula covering fewer topics in more depth;
- Develop and assess not only factual knowledge and their associated skills, such as numeracy and literacy, but also the transversal habits/skill such as problem-finding, problem-solving and collaboration;
- Take seriously into account the prior knowledge, ideas, interests and skills that learners bring to 'creative classrooms';
- Re-arrange education practicalities (such as timetables, learners' allocation in classrooms, etc.) in order to give more time and opportunities for creative, personalized learning; and
- Make better use of already available ICT for innovative teaching and learning.

One specific additional call on resources reported by many schools is the need to engage external partners to add value to what is already available from the school (Parker, 2013), something we return to in 6.1.8.

While much of what is covered in section 6 has a cost, in many cases the act of leadership is the switching of resources that are *already* available, for curriculum planning and timetabling or for professional learning, for example, to be used in the service of creating the climate and capacity to develop creativity across the school.

Of course one of the most important cost neutral decisions school leaders have to take is to decide who to hire in the first place and then to identify, nurture and promote creatively talented members of staff so that they can be in positions of influence.

- ➔ Creative leaders might audit their school's resources, considering 'resources' as broadly as possible.

### 6.1.3 Prioritise pedagogies for creativity

Section 3.2 contains a detailed overview of the kinds of signature pedagogies which evidence suggests are likely to develop the creativity of young people and it would be tempting to simply say that it is the leader's job to ensure their staff integrate appropriate examples in their teaching.

Of course such change management in schools is not so simple, especially where the choice of teaching and learning methods relates to many teachers' sense of professional identity and to their beliefs about what matters in school. Choosing to adopt a method such as design thinking or project-based learning or studio thinking, to take just three examples, implies a fundamentally different role for a teacher. For many, such approaches can seem to threaten their ability to 'control' or keep discipline in a class. What the signature pedagogies we described earlier have in common is that they are at least as much about process as they are about outcome and that they emphasise the importance of inquiry rather answering, applying knowledge rather than merely regurgitating information. All of this also needs to be done, as we argued in 1.2.5 while being mindful of the need to balance the development of knowledge at the same time as developing creativity.

We would expect that the creative leaders would, themselves, have an expansive view of education that includes prioritising creative habits of mind, and the knowledge and skills associated with these.

- ➔ Creative leaders might consider how structural changes could impact upon the pedagogies to which their teachers tend to default.

### 6.1.4 Promote formative assessment that stimulates and recognises creativity

In our review of the literature on *Progression in Creativity* (Spencer et al., 2012) we looked at the role of formative assessment for the nurturing of creativity and creative thinking in learners. We found that such assessment is both possible and desirable provided it is done for the benefit of the learner and not for summative grading purposes.

In a recent scoping review exploring the assessment of creativity in High School students, Bolden et al. (2020) have suggested a useful set of guiding principles as to how formative assessment practices such as Assessment for Learning (AfL) might be useful in refining and developing young people's creativity. Their research found 15 studies indicating the importance of

having defined criteria and/or frameworks for effective and useful creativity assessment and 10 studies which emphasised the particular value of self-assessment and/or reflection in supporting creativity:

*The findings of this scoping review study suggest there is value in employing assessment as a learning tool for students' creativity, despite the longstanding counter-argument that assessment only deters creativity.* (p. 369).

A small number of countries and states have begun to specify the development of creativity over time with clear criteria and level descriptions, see Appendix 1 for an example from Victoria, Australia (Victorian Curriculum and Assessment Authority, no date).

In our own work (Lucas and Spencer, 2017) we have begun to identify the kinds of formative assessment methods being used to track the development of student's creativity in schools across the world, **Table 1**.

From earlier research (Spencer et al., 2012, Lucas, 2016) we know that more study is needed in the area of assessment to better understand which approaches work in which contexts.

From a school leadership perspective the issue of assessing creativity provides an opportunity for leaders to consider both the issues involved and their relevant practicalities. In terms of the issues, it is important to be clear about the purpose of the assessment; will it be summative or formative? Equally they may wish to look for examples of documentation and level descriptors from which they can consider what progression in creativity might look like in secondary education

Practically speaking there are likely to be many issues:

- The school's definition of creativity and its progression
- The availability or otherwise of know-how and

systems among staff to develop approaches to assessing creativity, and, importantly,

- Whether or not the initiative is at a stage of its development where a focus on assessment is likely to improve quality and buy-in.
- ➔ Creative leaders might conduct an audit of assessment measures used currently – both formative and summative – and anticipate the impacts these might have on creative thinking. They might then consider what changes could be made to improve stimulation of creativity through assessment.

### 6.1.5 Influence teacher attitudes to their creativity

As we saw in section 5, we suggest that the development of teachers' creativity and the development of teachers' skill at teaching for creativity are connected. But it is also clear from the literature that teachers have many different views about creativity; it is likely that school leaders will find members of their staff who subscribe, for example, to many of the myths we explore in section 1.2.

Mainemelis et al. (2015) highlight the need to 'facilitate' the creativity of individuals (for our purposes; teachers). Their review finds 'not one but three different ways for exercising creative leadership' which, they argue, is why the idea of a 'unitary, context-general' (p. 451) theory of creative leadership has proven enigmatic in the past.

The paper develops a 'multi-context framework of creative leadership' based on the literature's three different conceptualisations of what creative leadership means. These three 'alternative manifestations' or 'strands' of research are:

1. Facilitating employee creativity;
2. Directing the materialisation of a leader's creative vision; and
3. Integrating heterogenous creative contributions.

**Table 1** Approaches to assessing creativity, Lucas and Spencer, 2017; p.160

Pupil	Teacher	Real-world	Online
Real-time feedback	Criterion-referenced grading	Expert reviews	Digital badges
Photographs	Rating of products and processes	Gallery critique	E-portfolios
Self-report questionnaires	Structured interviews	Authentic tests e.g.	
Logs/diaries/journals	Performance tasks	■ displays	
Peer review	Capstone projects	■ presentations	
Group critique		■ interviews	
Badges		■ podcasts	
Portfolios		■ films	
		Exhibitions	

The authors label these 'Facilitating', 'Directing', and 'Integrating' (p. 450). In an education setting we are probably most interested in strand 1: facilitating creativity, although the other strands may be relevant.

Bearing in mind that the context for the research was not educational, Mainemelis et al. write, regarding the 'facilitating' strand of research:

*Leaders in the Facilitating context may not be primary idea generators, but they still make both creative and supportive contributions... In addition, leaders make important supportive contributions to the creative process by shaping a supportive climate for creativity, by promoting new ideas... and by properly managing the stages of the creative process (p. 407).*

Lowe (2010) finds a number of key enablers to developing 'creativity and creative colleagues' which are useful here:

- Skilled, helpful people working in small teams with a clear role who are given management support;
- Being allowed to suspend judgment – 'incubation of ideas';
- A hierarchy to provide structure, yet a degree of flexibility (p. 70);
- Leaders who participate in idea generation to show keenness, and sometimes to 'kickstart' (p. 70-1).

A review by Davies et al. (2014) helpfully considers the roles and development needs of teachers to promote creativity and yields some findings about the importance of school culture and the sorts of things that are important for developing teacher creativity. These relate to teachers' own understanding of creativity and the authors separate these from pedagogic approaches themselves. Cultural factors include:

- Eliciting teachers' prior conceptions of creativity in education (i.e. how they understand it);
- Teachers taking on the role of learners to develop their own creativity;
- Working constructively with a mentor / coach (internal or external creative professional);
- Undertaking action research and reflection on their own classroom practice.

Influencing teachers' attitudes is strongly influenced by the tone of the endeavour as we explored in 6.1.1. Stoll and Temperley's suggestion (in 6.1.1), for example, that leaders should self-consciously relinquish control is key. Leaders need – as Heifetz and Linsky (2002) put it in their exploration of adaptive leadership in settings beyond school – to 'Give the work back' to those they are leading:

*To meet adaptive challenges, people must change their hearts as well as their behaviours ... solutions are achieved when "the people with the problem" go through a process together to become "the people*

*with the solution". The ideas have to be internalized, owned, and ultimately resolved by the relevant parties to achieve enduring progress". (p. 127).*

They suggest that this can be supported through four types of influencing interventions which are tailored to specific situations: making observations, asking questions, offering interpretation and taking actions.

- ➔ Creative leaders may wish to consider, proactively, the many small ways in which they can exert their influence to enable creativity to flourish.

### 6.1.6 Nurture and grow creative leaders / catalysts

Creative leaders need to be thinking about growing all leaders in their school to be catalysts of the sorts of changes that bring about creativity. These leaders may not be members of the senior leadership team, or heads, but there are other change catalysts who have a role to play. They may be informal teacher leaders, department heads, or leaders responsible for specific areas within school life. These sorts of leader all need influential others to help them.

While there is little research, specifically focused on teacher leadership for creativity, the significant role of distributed leadership in bringing about change and improvement is increasingly widely documented (Leithwood et al., 2020; Amels et al., 2021). Distributed leadership 'involves teachers taking and granting leadership roles according to expertise and problems to be addressed; they do so by taking the initiative and assuming responsibility' (Amels et al., 2021) Furthermore, social network analysis is also highlighting how social ties between individuals can influence which colleagues teachers turn to for advice and support and how ideas spread through schools (Penuel et al., 2013). Both formal and informal learning leaders can support the development and sustainability of specific changes.

Results of a research and development project involving middle leaders from schools who belong to a voluntary school-to-school partnership, provide insights into how successful teacher leader change catalysts play an important role in changing teachers' practice within and across schools (Stoll et al., 2018). This is more likely to happen when they understand how to lead change, read and develop their knowledge of relevant research, use this and other evidence to identify issues, inform changes, develop and improve practice, and evaluate progress. This gives them further confidence and impetus to take the initiative:

*The most successful teacher leaders had drive and energy, stimulated meaningful, informal conversations to connect and support development, and were outward facing, networking and seeking great practice elsewhere. They role modelled, championed improvement, were constructive critics, involved others, and kept morale up. They were clear about their vision of great teaching and learning and*

*understood the importance of strategically planning ahead, but adapted plans to fit different colleagues' needs. They also supported and coached colleagues to experiment and develop new practice, developing a trusting, collaborative culture within their smaller professional learning teams in which colleagues felt valued. (p. 56).*

For such teacher system leaders to flourish in their contexts and be able to innovate to meet local needs, they themselves need support to develop their adaptive leadership capacities and skills (Stoll, 2021; Boylan, 2018).

### 6.1.7 Develop a school-wide creative professional learning community

From wider study of school leadership we know that the promotion and participation of school leaders in teacher continuous professional development and learning (CPDL) is the single most important activity that they can undertake in terms of improving outcomes for pupils. Robinson et al. (2015) found that this kind of intervention has an extremely large impact with an 'effect size' of 0.84. Interestingly Robinson and colleagues reiterate one aspect of their finding:

*The descriptor for this dimension includes the words 'and participating' to make it clear that the leader doesn't stop at supporting or sponsoring their staff in their learning; they actually participate in the learning themselves—as leader, learner, or both. p.101*

It seems that, for school leaders, 'do as I say' is far less effective than 'do as I do' as an approach to achieve maximum impact. For secondary school leaders this finding is arguably both particularly important and rather challenging given the many calls on made on the time of senior leaders.

For the kind of changes required to embed creativity in schools, learning has to extend far beyond the pupils. In describing 'learning leadership', Istance and Stoll (2013) explain:

*This is centrally focused on student learning but extends well beyond that. Learning leaders understand that designing and developing innovative learning environments requires everyone to keep learning, unlearning and relearning because continuous learning of all players and partners is a condition of successful implementation and sustainability. (p. 23).*

Professional learning for creativity focuses on that. School leaders play a key role in deciding the focus of professional development, especially schoolwide professional learning, and, perhaps even more powerfully, how this will be experienced. Regarding professional learning, Cochrane and Cockett (2007) propose that 'One of the first stages is for teachers to develop their own understanding of what is meant by creativity' (p. 14). Creative journeys are non-linear:

*It is a world exploration rather than a two-week package holiday, more Columbus seeking a Westerly route to the Indies than a holiday flight to the Caribbean. (p. 79).*

The OECD (Vincent-Lancrin et al., 2019) draws on questionnaire data and qualitative feedback from 11 countries with 800 teacher participants. A chapter on teacher attitudes and practices addresses the need for teachers to 'embrace and own' the creativity and critical thinking agenda (p. 184). And part of this, of course, involves professional learning.

In considering CPDL processes, the OECD report cites authors who have called for 'the design of training programmes that are embedded in teachers' daily work and immediate context' to avoid the situation where teachers become 'passive recipients' rather than 'active contributors' because CPDL can be 'too disconnected from teachers' everyday practices' (p. 166). This mirrors much research around effective professional development and learning (Timperley, 2011; Cordingley et al., 2015), including in successful school systems (Jensen, 2016), such as Singapore, which emphasises creativity.

The COVID-19 pandemic has, of course, hugely impacted the educational landscape, with teachers and schools adapting quickly to remote and blended forms of teaching and learning and an associated need for these kinds of professional learning. A rapid evidence assessment of remote professional development (Education Endowment Foundation, 2020) concludes that:

1. Professional development can be supported effectively remotely;
2. Remote coaching, mentoring and expert support can be effective alone or as part of broader PD programmes;
3. The use of video can enhance remote PD;
4. Interactive content and opportunities for collaboration hold promise for remote professional development;
5. Remote professional development requires supportive school conditions.

But it's not just professional learning. A body of research exists on professional learning communities as a powerful means by which leaders organise and create the culture for collaborative professional learning and development. Broadly, professional learning communities are groups of people who, as a collective, share and critically interrogate their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way. Importantly, they deprivatise their daily activity, opening it to the scrutiny of others and enabling joint development of their practice over time (Stoll et al., 2006). A range of collaborative learning activities can now be found in

the literature on professional learning communities, for example joint analysis of data and lesson study. None of these is specifically attributed to the development of creativity but their general principles can be adapted to this focus.

While professional learning communities may exist across whole schools, they are also frequently found among smaller groups, who can be siloed, especially at secondary level (McLaughlin and Talbert, 2001). A key emphasis of learning leadership is ensuring deep, ongoing and widespread learning – not only at an individual level, but between and across groups of colleagues – in working to develop the school as a learning organisation (Kools and Stoll, 2016; OECD, 2016).

A school that is a learning organisation (see **Figure 14**) is a creative professional learning community that is clear about its vision for student learning and wellbeing (creativity in this case) but is able to adapt flexibly and learn its way into the future. This is done through: ensuring that the vision is jointly developed, shared and that curriculum, pedagogy and assessment are developed and aligned; an orientation to practice-related inquiry, exploration and innovation; extensive and ongoing individual and collaborative professional learning; an emphasis on trusting, fearless but challenging team work; systems (e.g. time, space, technology, plans, theories of change etc.) and dialogic processes that enable it to collect and process evidence, exchange and move around knowledge and practice as colleagues 'think together'; and that the learning leaders both model this and grow other learning leaders.

Schools as learning organisations are not isolated. They, and their learning leaders, are acutely attuned to their external environment and critically, learn with and from the many networks in their wider eco-system, which is the next thing creative leaders do or need to do.

- Creative leaders might wish to discuss with colleagues which aspects of creative leadership discussed in this review are currently going well and, with staff, co-design a programme of CPDL to embed creativity more intentionally.

### 6.1.8 Connect with the wider learning eco-system

Although the initiative itself is now dated, Gkolia et al. (2009) report on Education Action Zones, a form of extended professional learning community which formed one of the key elements of government policy in trying to drive up standards and disseminate best practice across schools at this time period. The findings of the study suggest that the schools involved in the Zone experienced a period of innovation and positive development through one of its main initiatives, the 'Creative Learning/Collaborative Leadership' project, which has relevance to our current review.

Goldring and Sims (2005) write about the role of leaders in developing and maintaining external networks, with specific reference to a US scheme called PLAN (Principals Leadership Academy of Nashville). PLAN aims to improve student achievement by bringing together universities, schools, and community leaders who work together to improve teaching and learning. PLAN is based on a key belief that headteachers make a significant difference to the school's quality and culture, and that they need assistance in all stages of their professional lives. The Academy develops principals through a course of study with the central question: 'what do school leaders need to know, be, and do to ensure student achievement?' (p. 228).

The focus of the research is not specifically on creativity other than in terms of the way leaders and groups act and think 'creatively' to make good decisions and to 'propel teaching and learning' (p. 243). The relevance of the paper is more in its discussion of the role of leadership in making and maintaining external successful interorganisational linkages.

A recent report for the World Innovation Summit for Education (Hannon et al., 2019) offers exciting glimpses of the ways in which local learning ecosystems might act as a force for change with regard to, for example, creativity in schools:

*Deriving from the field of evolutionary biology, an 'ecosystem' is a community of interdependent organisms acting in conjunction with the natural environment. Over the last decade, the term has proliferated as a metaphor for thinking differently about the future of education, moving beyond a top-down systems approach. p.1*

- Creative leaders might connect with other school leaders locally, regionally, nationally and, potentially, internationally.

## 6.2 Next steps

This review of evidence underpins a number of activities in our wider endeavour to support school leaders in enabling creativity to flourish in their schools. These include:

- The identification of schools which are already some way down the line in teaching for creativity and creative thinking and using these to critique and validate the findings of this review.
- Developing a network of schools interested in creative leadership with which we can share insights and from which we can learn more about what works, sharing these via Creativity Exchange.
- Undertaking qualitative research with school leaders in England to validate the findings in this review and learn more about the learning and development needs of school leaders in England.

- Building a more substantial package of professional learning materials to actively promote and support the development of creativity in schools within the new Creativity Collaboratives, across the network of Mercers associate schools and alongside partner organisations working with schools, and, in time, collaborating more widely with school leaders across England, the UK and internationally.

The production of this review was paused by Covid-19.

One unexpected opportunity we were able to seize was an opportunity to test out many of the ideas with school leaders in Perth, Australia, and begin to see how these might be used by them, (Lucas, 2021).

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## Appendix 1

# Critical & Creative Thinking, F-10, Victoria, Australia

Foundation to Level 2	Levels 3 and 4	Levels 5 and 6	Levels 7 and 8	Levels 9 and 10
<b>Questions and Possibilities</b>				
Identify, describe and use different kinds of question stems to gather information and ideas.	Construct and use open and closed questions for different purposes.	Examine how different kinds of questions can be used to identify and clarify information, ideas and possibilities.	Consider how to approach and use questions that have different elements, including factual, temporal and conceptual elements.	Investigate the characteristics of effective questions in different contexts to examine information and test possibilities.
Consider personal reactions to situations or problems and how these reactions may influence thinking.	Explore reactions to a given situation or problem and consider the effect of pre-established preferences.	Experiment with alternative ideas and actions by setting preconceptions to one side.	Suspend judgements temporarily and consider how preconceptions may limit ideas and alternatives.	Suspend judgements to allow new possibilities to emerge and investigate how this can broaden ideas and solution.
Make simple modifications to known ideas and routine solutions to generate some different ideas and possibilities.	Investigate different techniques to sort facts and extend known ideas to generate novel and imaginative ideas.	Identify and form links and patterns from multiple information sources to generate non-routine ideas and possibilities.	Synthesise information from multiple sources and use lateral thinking techniques to draw parallels between known and new solutions and ideas when creating original proposals and artefacts.	Challenge previously held assumptions and create new links, proposals and artefacts by investigating ideas that provoke shifts in perspectives and cross boundaries to generate ideas and solutions.
<b>Reasoning</b>				
Examine words that show reasons and words that show conclusions.	Examine and use the structure of a basic argument, with an aim, reasons and conclusion to present a point of view.	Investigate common reasoning errors including contradiction and inconsistency, and the influence of context.	Examine common reasoning errors including circular arguments and cause and effect fallacies.	Examine a range of rhetorical devices and reasoning errors, including false dichotomies and begging the question.
Compare and contrast information and ideas in own and others reasoning.	Distinguish between main and peripheral ideas in own and others information and points of view.	Consider the importance of giving reasons and evidence and how the strength of these can be evaluated.	Investigate the difference between a description, an explanation and a correlation and scepticism about cause and effect.	Examine how to identify and analyse suppressed premises and assumptions.
Consider how reasons and examples are used to support a point of view and illustrate meaning.	Investigate why and when the consequences of a point of view should be considered.	Consider when analogies might be used in expressing a point of view and how they should be expressed and evaluated.	Investigate when counter examples might be used in expressing a point of view.	Investigate the nature and use of counter examples structured as arguments.
	Identify and use 'If, then..' and 'what if..' reasoning.	Examine the difference between valid and sound arguments and between inductive and deductive reasoning, and their degrees of certainty.	Consider how to settle matters of fact and matters of value and the degree of confidence in the conclusions.	Consider ambiguity and equivocation and how they affect the strength of arguments.
	Explore distinctions when organising and sorting information and ideas from a range of sources.	Explore what a criterion is, different kinds of criteria, and how to select appropriate criteria for the purposes of filtering information and ideas.	Examine how to select appropriate criteria and how criteria are used in clarifying and challenging arguments and ideas.	Investigate use of additional or refined criteria when application of original criteria does not produce a clear conclusion.

Foundation to Level 2	Levels 3 and 4	Levels 5 and 6	Levels 7 and 8	Levels 9 and 10
<b>Meta-Cognition</b>				
Consider ways to express and describe thinking activity, including the expression of feelings about learning, both to others and self.	Consider concrete and pictorial models to facilitate thinking, including a range of visualisation strategies.	Investigate thinking processes using visual models and language strategies.	Consider a range of strategies to represent ideas and explain and justify thinking processes to others.	Critically examine their own and others thinking processes and discuss factors that influence thinking, including cognitive biases.
Explore some learning strategies, including planning, repetition, rewording, memorisation and use of mnemonics.	Examine an increased range of learning strategies, including visualisation, note-taking, peer instruction and incubation, and reflect on how these can be applied to different tasks to reach a goal.	Examine learning strategies, including constructing analogies, visualising ideas, summarising and paraphrasing information and reflect on the application of these strategies in different situations.	Examine a range of learning strategies and how to select strategies that best meet the requirements of a task.	Investigate how the use of a range of learning strategies can be monitored, evaluated and re-directed as necessary.
Investigate ways to problem-solve, using egocentric and experiential language.	Investigate a range of problem-solving strategies, including brainstorming, identifying, comparing and selecting options, and developing and testing hypotheses.	Investigate how ideas and problems can be disaggregated into smaller elements or ideas, how criteria can be used to identify gaps in existing knowledge, and assess and test ideas and proposals.	Consider how problems can be segmented into discrete stages, new knowledge synthesised during problem-solving and criteria used to assess emerging ideas and proposals.	Investigate the kind of criteria that can be used to rationally evaluate the quality of ideas and proposals, including the qualities of viability and workability.
<b>Achievement Standard</b>				
By the end of Level 2, students use and give examples of different kinds of questions. Students generate ideas that are new to them and make choices after considering personal preferences.  Students identify words that indicate components of a point of view. They use reasons and examples for different purposes.	By the end of Level 4, students explain how to construct open and closed questions and use them for different purposes. Students select and apply techniques to generate a range of ideas that extend how problems are solved.  Students describe and structure arguments with clearly identified aims, premises and conclusions. They use and explain a range of strategies to develop their arguments. They identify the need to make distinctions and apply strategies to make these.	By the end of Level 6, students apply questioning as a tool to focus or expand thinking. They use appropriate techniques to copy, borrow and compare aspects of existing solutions in order to identify relationships and apply these to new situations.  Students distinguish between valid and sound arguments and between deductive and inductive reasoning. They explain how reasons and evidence can be evaluated. They explain and apply basic techniques to construct valid arguments and test the strength of arguments.	By the end of Level 8, students prioritise the elements of a question and justify their selection. Students demonstrate flexibility in thinking by using a range of techniques in order to repurpose existing ideas or solutions to meet needs in new contexts.  Students explain different ways to settle matters of fact and matters of value and issues concerned with these. They explain and apply a range of techniques to test the strength of arguments.	By the end of Level 10, students construct and evaluate questions, including their own, for their effectiveness. They demonstrate a willingness to shift their perspective when generating ideas, resulting in new ways of perceiving solutions.  Students structure complex valid arguments. They explain and apply a range of techniques to test validity within and between arguments. Students identify, articulate, analyse and reflect on their own and others thinking processes. They use, monitor, evaluate and redirect as necessary a range of learning strategies. Students develop, justify and refine criteria to evaluate the quality of ideas, proposals and thinking processes.

Foundation to Level 2	Levels 3 and 4	Levels 5 and 6	Levels 7 and 8	Levels 9 and 10
<b>Achievement Standard (continued)</b>				
Students express and describe thinking activity. They practise some learning strategies. Students demonstrate and articulate some problem-solving approaches.	Students use concrete and pictorial models to facilitate thinking, including a range of visualisation strategies. They practice and apply an increased range of learning strategies, including visualisation, note-taking, peer instruction and incubation. Students select and apply a range of problem-solving strategies.	Students represent thinking processes using visual models and language. They practice and apply learning strategies, including constructing analogies, visualising ideas, summarising and paraphrasing information. Students disaggregate ideas and problems into smaller elements or ideas, develop criteria to assess and test thinking, and identify and seek out new relevant information as required.	Students use a range of strategies to represent ideas and explain and justify thinking processes to others. They evaluate the effectiveness of a range of learning strategies and select strategies that best meet the requirements of a task. Students independently segment problems into discrete stages, synthesise new knowledge at intermediate stages during problem-solving and develop and apply criteria to assess ideas, proposals and emerging thinking.	



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