Teachers’ and pupils’ perceptions of creativity across different key stages

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Introducing Creativity across Different Key Stages

Introduction

Creativity has been a topic for discussion in education for several decades (Craft, 2006). Education in England changed following the introduction of a rigid National Curriculum in 1989 (Wellington and Ireson, 2008). A consequence of the National Curriculum for teachers was delivering prescribed content and the heavy demands of assessment led to many teachers ‘teaching to the test’ (Jenkins, 2000). During subsequent revisions of the National Curriculum, creativity has emerged as an important feature. For example, the Secondary Curriculum in 2008 included a description of creativity and critical thinking as enabling:

‘... young people to engage with the world around them in critical and creative ways and to take part in imaginative and purposeful activity across the entire curriculum. Creativity and critical thinking can unlock young people’s potential, leading to personal fulfilment, as well as contributing to the artistic, scientific or technological achievements that help shape and influence wider society’ (Qualifications and Curriculum Authority, 2008: 20).

The National Advisory Committee on Creative and Cultural Education (NACCE) (1999) have produced guidance on creativity and the Creative Partnerships creative learning programme (2007), which aims to raise pupils’
achievements, aspirations, skills and life chances, introduced a programme which positively impacted on nearly three thousand schools.

Creativity is considered to be an essential skill in our highly complex and changing society (Craft, 2003) as it helps young people develop a level of adaptability to ensure they can become part of an effective future workforce. Smears et al. (2011) consider it crucial that these skills are nurtured throughout pupils’ education. Furthermore, Humes (2011: 3) suggests that pupils exploring for themselves in their lessons can be a useful health tool also:

‘...an unstated assumption that pupils’ motivation will increase if ‘creative’ approaches to teaching and learning are adopted and this, in turn, will enhance their sense of personal well-being’.

Thus, creativity is highlighted as an important skill for pupils to develop during their education. It is the responsibility of teachers to deliver this vast area. This study examined teachers’ and pupils’ perceptions of how they used and experienced creativity within the curriculum. Specific research questions were as follows:

1) What do teachers think about creative pupils in their classroom?
2) How do practising teachers use creativity within their teaching?
3) What do teachers and pupils understand about ‘creativity’?
4) How do teachers think about creative pupils in their classes?
Describing and defining creativity

Treffinger et al. (1968) reported that many teachers did not understand what is meant by creativity in their teaching. Although this was over forty years ago, this may still be an issue as Fryer and Collings (1991) reported that research into teachers’ views of creativity has been somewhat neglected and Simmons and Thompson (2008) have more recently commented on tensions surrounding creativity in education, one being the difficulty of defining it. Therefore, the attempts to agree on a definition have been a longstanding problem and recent research continues to demonstrate this (Hong and Kang, 2010; Kind and Kind, 2007; Baer and Kaufman, 2012) and this could hinder its progress within schools. To provide teachers with a starting point, descriptions of what creativity in education could entail are available; for example, in the current National Curriculum, this description of creativity has been developed through a Framework of Personal Learning and Thinking Skills (see ‘Creative Thinkers’, Qualifications and Curriculum Development Agency, 2011):

‘Young people think creatively by generating and exploring ideas, making original connections. They try different ways to tackle a problem, working with others to find imaginative solutions and outcomes that are of value’.

However, this in itself is complex and raises questions such as what is working originally or what imaginative outcomes are of value? Under the current coalition government, the role and nature of creativity in education could change (Smears et al., 2011) maybe as a result of curriculum changes
which are due to be introduced in 2014 (Department for Education, 2012). The Creative Partnerships programme had its funding withdrawn (end of the academic year 2010/11); maybe this suggests, from the government, there is less need for this initiative (Creative Partnerships, 2010). Also, the impact of the new performance measure, the ‘English Baccalaureate’, introduced in 2010, is likely to influence how teachers feel they have to teach. There may be less inclination by teachers to work in a creative manner due to pressures of subject content delivery to produce the best possible measured outcome of pupil achievement.

The Creative Partnerships programme (established in 2002 by the government) asserts that ‘creativity is the wider ability to question, make connections, innovate, problem solve and reflect critically’ (2007: 4). The programme provides suggestions for teachers to consider tailoring appropriate activities for pupils to undertake in lessons to be creative. The NACCCE (1999), which was influential in convincing the government of the day that this was to be an area to include in the National Curriculum, provides a useful, coherent description that is appropriate for both primary and secondary teaching:

‘Creative processes have four characteristics. First, they involve thinking or behaving imaginatively. Second, this imaginative activity is purposeful; that is it is directed to achieving an objective. Third, these processes must generate something original. Fourth, the outcome must be of value in relation to the objective’ (NACCCE, 1999: 29).
Again, this definition could cause language issues. For example, both definitions referred to include the word ‘original’. This term in itself can be interpreted differently: original to the child/teacher or the first time a thought/investigation had been discovered?

Another description of creativity within teaching proposed seven creative behaviour categories to consider when delivering subject material: novelty, appropriateness, motivation, fluency, flexibility, sensitivity and insightfulness when considering working creatively (Musta’amal et al., 2009). These categories prompt questions about whether teachers consider these areas when planning their teaching or providing tasks to enable their pupils to explore and think in this way.

A definition specifically for education would allow ‘universal participation’ (Simmons and Thompson, 2008: 604). This would enable all teaching practitioners to understand what is required in the classroom and clarify any misconceptions. There is an expectation from the National Curriculum that creativity will be embedded in classroom practice and there will need to be consideration as to whether this area is being met by teachers – and to what degree. This is the rationale behind this study: to learn more about how practicing teachers respond to creativity (and to examine if teacher attitudes towards it have changed in the last forty years) and if pupils acknowledge creative teaching and learning positively. Knowledge of this would assist policy makers so that improvements, training or changes can be made by
teacher educators or via continuing professional development courses for teachers.

**Creativity within primary and secondary teaching**

Creativity could be more associated with primary school teaching and the idea of learning through play (Duffy, 2003). However, the development of creative teaching, critical thinking and concepts such as creative thinking (Burke *et al.*, 2007), are applicable to secondary school. With the abolishment of the National Curriculum Assessments in 2008 (Curtis, 2008), teachers and schools could develop their delivery of creativity within the Key Stage 3 (KS3)\(^1\) curriculum since it is now widely accepted that it is important for young people of all ages to develop these skills (Craft, 2003; Craft, 2006; McWilliam and Haukka, 2008). This is acknowledged by the Qualifications and Curriculum Authority and the Department for Education and Employment (1999) who discuss the importance of creativity across all subjects. To enable creativity to be developed effectively in schools, the Creative Partnerships programme has encouraged and developed relationships between schools and creative professionals (of those involved in the programme). In participating schools, this programme has been developed throughout all Key Stages 1-4 and reported benefitting teachers across the primary and secondary ages (Creative Partnerships, 2010).

Within both primary and secondary teaching, creativity is most commonly associated with Arts subjects such as ‘Music, Art or Drama’ (McWilliam and

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\(^1\) Key Stage 1 pupils aged 5-7yrs; Key Stage 2 pupils aged 7-11yrs; Key Stage 3 pupils aged 11-14yrs; Key Stage 4 pupils aged 14-16yrs.
Haukka, 2008: 652) rather than Mathematics and the Sciences. However, whatever the subject, if pupils are to produce novel work, the mental processing requires deep mastery and understanding of the subject material and hence a requirement of displaying higher order thinking skills (Fautley and Savage, 2007). Creative questioning could be problematic for some teachers with limited experience of working in this way. Also, some pupils may find this kind of work difficult (Bloom, 1956) as the level of thinking requires skills, such as evaluating or synthesizing. Pupils need to be provided with time to learn how to think and explore new ways of thinking. For some, it will be new and challenging if they are used to simply memorizing facts or following instructions (Fautley and Savage, 2007).

At secondary school, examinations are central to measuring pupil progress and school performance and, since the first external examinations at secondary level now start from Year 10\(^2\) (the General Certificate in Secondary Education (GCSE)), this additional external examination pressure on teachers, is greater. There are already many demands on teachers with familiarising themselves with new curricula, examination specifications, setting pupil targets, all of which are within time constraints of a busy school term. Teachers are also required to develop and deliver schemes of work (Longshaw, 2009). As a consequence, creativity may be perceived as an additional burden and as it is not necessarily examined, it may be deemed less important than subject content.

\(^2\) Yr 10 – pupils aged 14-15yrs.
…teachers personally value creativity but on the other hand, they need their students to get results, which are not contingent on being creative’ (Nicholl and McLellan, 2008: 596).

In the author’s opinion, it is important that education policymakers are aware that creativity is often a word that can cause apprehension for some teachers. This could be due to their understanding of creativity and feeling that it suggests time is required to consider and develop creative resources. Primary and secondary teachers will respond differently to the descriptions in the National Curriculum so therefore subject specific examples would dispel any myths and uncertainties held by practitioners.

**Teachers being creative**

Some teachers may lack confidence in their ability and understanding of creativity as it is described in the curriculum. Since creativity varies from one task to another, and one moment to the next (Baer and Kaufman, 2012), teachers may require explicit explanations as to what constitutes creative work in their teaching. It is imperative to reassure teachers that ‘creativity is not mysterious, elitist or inaccessible’ (Simmons and Thompson, 2008: 606). Teachers are creative even though they may lack confidence in their own ability as Longshaw (2009: 1) states ‘All teachers are creative: they have to be!’ The Creative Partnerships programme (2007: 21) impacted on creative teaching with 92% of those teachers participating being more effective in the classroom and being more willing to take a creative approach. Also, 79% of
participating schools felt that this programme has improved the attainment of pupils. Therefore the impact of this programme demonstrated the potential for teachers (and pupils) if they are supported in their teaching.

**Method**

Appropriate methods to address the research questions were deemed to be questionnaires and interviews. This ‘mixed method’ approach (Thomas, 2009), mainly qualitative, was deemed necessary to fully address the research questions and to enhance validation through triangulation of the empirical data (Denscombe, 2010).

Participation in the project for secondary trainee teachers (on a one year Post Graduate Certificate in Education (PGCE) course at a University in the East Midlands), teachers and pupils (at an independent school in Yorkshire) was voluntary. All participants were provided with the project outline and signed informed consent forms and were made aware of their right to withdraw at any time during the study. The participating pupils were aged from 9-18 years and the school was situated in a small, affluent town. The sample was opportunistic. Semi-structured boy/girl interviews were conducted involving 28 pupils in seven groups of four in number, one group per year from Year 5 to Year 9, and mixed Years 10/11 and 12/13. During the interviews, the following questions were asked: How would you define creativity? What activities have you undertaken in lessons that you would consider being creative? Do you feel that when teachers use creative approaches that it helps your learning? Which subjects do you consider as being creative?
Twenty seven teachers (sixteen primary and eleven secondary teachers) and twenty trainee science teachers completed questionnaires. These comprised of three sections: the first section requested a definition of creativity and a description of how the participants used it in their teaching. The second section contained eight questions from Treffinger et al.’s (1968) survey concerning teachers’ attitudes towards creative pupils. This was selected to observe any changes in the last forty years of teachers’ attitudes towards creativity in the classroom. The authors (Treffinger et al.) deemed the questionnaire reliable due to their participants and findings. Only eight questions (of the fourteen) were included to avoid overlap in the author’s opinion, and a three point Likert scale used to obtain information on agreement/disagreement or no opinion on the statements. The third section included ten questions on Indexing Creativity and focused on teaching styles (these were based on Cropley’s 1997 nine point list on fostering teachers’ classroom behaviour) (see Appendix), comprising: dependence, integration, motivation, judgement, flexibility, evaluation, question, opportunities and frustration. One question on each category was asked, with the exception of ‘integration’ for which two were included to help address the fourth research question.

Discussion of Findings

1 Teachers’ Perceptions of Creativity (Questionnaire)

Defining Creativity The definitions provided by the teachers and trainee teachers were categorised into three areas, these being: innovative teaching (48%), pupil activities (20%) and teaching and learning (32%). Within the
innovative teaching category, teachers referred to: engaging pupils; imagination; different approaches/experiences; thought provoking work; thinking outside the box; originality and entertaining delivery to inspire pupils. Examples of the pupil activities included reference to: debates, posters, role-play, videoing, news reports (secondary/trainee teachers only), DVDs, role-play and making things (primary teachers only). Within the teaching and learning category, teachers referred to creativity in relation to variety in their teaching, catering for different learning styles, making work relevant and fun, and children learning with enthusiasm.

**Examples of Creative Activities** Creative tasks which teachers had undertaken with their classes involved:

- Role-play
- Using flashcard games
- Making posters
- Doing pupil-led investigations
- Making things e.g. models
- News reports
- Walking outside for inspiration for poetry
- Imagining they were somewhere else
- Tasting different foods
- Using plasticine

**Questions based on Treffinger et al.’s (1968) attitude survey of teachers towards creativity**
**Results from the eight statements on teacher attitudes:** All teachers reported that they thought it ‘possible to improve a pupil’s creativity’ and 80% of teachers felt that all ‘children cannot be taught how to cope with every novel situation’ encountered in their daily life, even through skills developed from creative experiences. These findings were in agreement with Treffinger et al.’s results. Teachers disagreed, although there were some small differences, that creative people are ‘born not made’ and that creative work is a ‘natural strength’ for some pupils but not others. 93% of teachers dismissed the assertion that ‘creative children are a liability to their classroom’ and that ‘creative children would create a nation of non-conforming individuals’ (see Figure 1). The data generally showed a consensus of opinion across the categories, irrespective of teacher age or teaching experience. All areas concurred with Treffinger et al.’s results. However, not all teachers responded to this section of the questionnaire. Therefore, these data must be treated with caution and also some teachers may have ticked what they perceived to be the ‘correct’ answer.

![A Bar Graph showing All Teachers’ Responses regarding Creative Children](image)

Figure 1: Teachers’ Attitudes towards Creative Children (based on Treffinger et al.’s, 1968 survey).
Questions based on Indexing Creativity Fostering Teacher Behaviour

Cropley’s (1997) nine point list of teaching styles: The findings revealed different responses from the teachers of different Key Stages. Secondary teachers reported that they were more likely to teach for integration and motivation of their pupils. Trainee teachers scored highest on the question relating to integration and therefore they were more likely to provide opportunities for their pupils to regularly work in groups. Primary school teachers were more likely to offer emotional support for frustrated pupils, offer time to look at pupils’ work (dependence) and expect pupils to check/evaluate their own work before handing it in.

Comparing teaching styles used with pupils of different Key Stages, there are similar mean responses for the following based on Cropley’s nine point list: judgements, flexibility, questioning and opportunities categories (see Figure 2). However, within these similarities, the primary teachers have a high standard deviation showing a spread of responses. Secondary and trainee teachers had lower standard deviations (see Table 1).

Figure 2: Comparisons of Teaching Style Responses.
<table>
<thead>
<tr>
<th>Your Teaching Style</th>
<th>Secondary SD</th>
<th>Primary SD</th>
<th>Trainee SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependence</td>
<td>1.38</td>
<td>0.64</td>
<td>0.97</td>
</tr>
<tr>
<td>Integration</td>
<td>0.69</td>
<td>1.96</td>
<td>0.76</td>
</tr>
<tr>
<td>Motivation</td>
<td>0.67</td>
<td>1.99</td>
<td>0.84</td>
</tr>
<tr>
<td>Judgement</td>
<td>0.90</td>
<td>1.88</td>
<td>0.75</td>
</tr>
<tr>
<td>Flexibility</td>
<td>0.98</td>
<td>1.92</td>
<td>0.83</td>
</tr>
<tr>
<td>Evaluation</td>
<td>1.10</td>
<td>1.55</td>
<td>0.92</td>
</tr>
<tr>
<td>Question</td>
<td>0.67</td>
<td>1.90</td>
<td>0.70</td>
</tr>
<tr>
<td>Opportunities</td>
<td>1.13</td>
<td>1.55</td>
<td>0.79</td>
</tr>
<tr>
<td>Frustration</td>
<td>1.18</td>
<td>0.74</td>
<td>1.19</td>
</tr>
<tr>
<td>Integration</td>
<td>1.48</td>
<td>1.96</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Table 1: Standard Deviations for Teaching Style Responses.

2 Pupils’ Perceptions of Creativity (Interviews)

Pupils’ definitions of the term ‘creativity’ included references to:

- expressing yourself;
- thinking ‘outside of the box’ but sensibly;
- making things;
- using your imagination;
- engaging in personal thought.

The general agreement amongst the pupils was that they enjoyed creative lessons. Pupils in Yrs 5 and 6\(^3\) felt their creative subjects were: Art, History, Geography, Music, Information and Communication Technology (ICT), Physical Education and English. For pupils in Yrs 7, 8 and 9, subjects that were identified as being creative were Design and Technology, Art and Geography. Pupils in Yrs 7-9 also mentioned that Science experiments helped them to remember content and concepts. Pupils in Yrs 10-11 felt that learning creatively was more common in their option GCSE subjects: Art, ICT,
Design and Technology, Music and Physical Education, as well as in writing their English essays and discussion in Religious Studies. This age group considered that creativity was not apparent in Mathematics or Science lessons, and that there was less creative teaching as they progressed through the school. Sixth form pupils considered creativity to be integral to how they used their time, enabling them to adapt to the needs of a situation at school (for example, helping other pupils, revising, meeting coursework deadlines) (See Figure 3 for summary). Fun learning games and being creative (by making things) helped some pupils in Yrs 7-9 to learn, while other year groups did not find these activities helpful. Some Yr 7-10 pupils felt that an over emphasis on creativity would become boring. One pupil commented that he would like more creativity in Mathematics because he finds the subject difficult and an approach using games or different strategies would help him to remember the key facts.

![A Chart to show which Subjects Pupils considered to be Creative](image)

Figure 3: Subjects which pupils described as being ‘creative’ (Pictorial representation only; no quantitative interpretation as purely indicating creative subjects) (N.B. Sixth Form pupils did not refer to subjects hence why they are not included).

**Discussion**

*Teachers’ perceptions of creative pupils*
Teachers revealed positive responses when answering questions associated with teaching, and addressing the needs of, creative pupils. Teachers reported that they feel it is possible to improve a pupil’s creativity and that creative skills can be developed in the classroom (not just an inherited trait). These findings are in agreement with those of Treffinger et al. (1968) which demonstrate that despite seeming dated, the attitudes are similar today despite more research on the topic. This could be expected; however, it could imply little progress within the use of creativity in teaching. The findings also revealed that some teachers agreed that problem solving is a strength of some pupils. They also acknowledged an awareness of the positive impact of creativity in their teaching to equip pupils with necessary employability skills for the future. However, there were some slight differences in opinion to this question and this could be due to the nature of the different teaching environments in primary/secondary schools. For example, in primary schools, pupils are commonly taught by one class teacher whom they know well. In contrast, at secondary school, pupils are taught by subject specialists and pupils move around the school for different lessons consequently spending less time with any one class teacher. There are also potential time constraints within lessons to cover specification content at a secondary level as suggested earlier by Nicholl and McLellan (2008) and therefore teachers may feel they do not have enough time for creative activities.

Creativity used by teachers

Teachers reported that they provided creative teaching and learning environments in a number of different ways. These creative experiences
serve to expose pupils to a range of thinking styles, problem-solving and other skills such as team-working or independence. Thus, encouraging creativity for pupil learning in the classroom may help pupils to develop the appropriate workforce skills that are deemed desirable (Craft, 2003; Simmons and Thompson, 2008) such as using their imagination or independence. The creative learning experiences provided by teachers were different for different subjects and Key Stages. However, at each stage, there was evidence of creative practice. This is encouraging since teachers perform a crucial role in developing and nurturing creativity in their lessons and amongst their pupils (Soh, 2000). They require the confidence to establish a safe classroom environment suitable for exploration, risk taking and for errors to be made by their pupils. They also require the time within a busy school day and curriculum to allow pupils to be creative. Developing potential links between subjects such as using ICT in mathematics and music in science (Fautley and Savage, 2007) provides an avenue for pupils to explore their learning in different surroundings. This could be a method to aid pupils’ development of basic skills and creativity in other subjects. The findings confirm Longshaw’s (2009: 91) belief that ‘All teachers are creative: they have to be!’, and the different applications of creativity amongst teachers should be encouraged in order to develop further novel approaches and ideas to be used in the classroom.

**Defining creativity**

Teachers’ understanding of creativity was broad and this concurs with much research on the complexities associated with defining the term (Craft, 2003;
McWilliam and Haukka, 2008). This confirms the recommendation for a specific term for creativity in education terms as suggested by Simmons and Thompson (2008). However, to progress this area within teaching further, an approach detailing specific case studies of creativity in action across different Key Stages and subjects would be beneficial. This would correct any misinterpretations from the complex and vague definitions and provide the necessary examples, from which teachers learn, so that they can develop their creativity in the classroom. The Creative Partnerships programme (2007), as commented on earlier, showed the positive impact of clear guidance being provided to teachers to develop their creative teaching. Also, the NACCCE (1999) provided a logical framework for creative teaching; however, this could be reviewed and adjusted to clarify further to teachers how it should be delivered and hence the case studies approach would enable this.

Pupils’ understanding of creativity concurs with research on teachers’ definitions of the term by Fryer and Collings (1991: 77) using words such as ‘imagination’ and ‘self-expression’. The findings of a study by Manning et al. (2009) reported that trainee teachers on the PGCE course perceived creative lessons as incorporating variety, relevant links to everyday life and the appropriate atmosphere in the classroom environment. This represented a limited understanding of creativity and is also apparent in this research with both experienced and trainee classroom teachers across all Key Stages. Therefore, the findings reveal that creativity requires more detail in its coverage in Initial Teacher Training and/or Continuing Professional
Development courses. Specific areas that were highlighted as needing attention were: developing teacher questioning; encouraging pupils to explore their own ideas further and not relying on textbooks; helping them to be more independent in checking their own work; and supporting the benefits of social constructivism through group work. Training in these areas could reduce anxieties and misconceptions (Robinson, 2001) regarding creativity.

Enthusing teachers to develop creative learning/teaching in their classroom is a challenge and accentuating the benefits to pupil learning will be paramount. Support and reassurance from school leaders is no doubt crucial for any substantial impact to be achieved.

**Creativity impacting on pupil learning**

Pupils reported that creative approaches in the classroom could help their learning. This was illustrated by pupils clearly remembering certain ‘creative’ activities they had undertaken and the associated theory related to it. There was no evidence to support that creativity in their lessons enhanced overall learning; one can surmise that if pupils could recall the theory and the lesson this would aid pupil understanding and therefore result in success in examinations. Much research and interest on creativity in schools has been related to the skills acquired and thus the positive impact on the future workforce (Craft, 2006). The place of creativity in the curriculum has been deemed important and therefore an area for continued research would be that of how it contributes to pupil learning. Educating and encouraging teachers that in order to be in the profession they are, by nature, creative (Longshaw, 2009) and providing clearer guidelines and examples of how it can be used
across all subject areas and ages and abilities could be the route to more
creative teaching, if it is seen as a critical education agenda.

Conclusions

This study found that all teachers, irrespective of experience, Key Stage
teaching or subject, interpreted creativity as a broad area encompassing
different activities to engage pupils. Encouragingly, teachers generally
supported creativity and aimed to provide creative tasks in their lessons
(based on their understanding). The definitions provided by teachers largely
related to having variety in their classroom teaching and this finding concurs
with that of Manning et al. (2009) who went on to suggest that more training is
necessary in the complexity of creativity and the spread of opportunities and
activities that it can provide within teaching. It would appear from the teachers’
definitions that creativity is limited and personal to the individual and hence if
a universal definition could be formulated this could develop the breadth of
creativity. This identifies an area where Initial Teacher Training and
Continuing Professional Development courses could be beneficial.

Teaching styles associated with creativity amongst teachers differ for the
different ages (for example secondary teachers share more of their ideas to
use in lessons whereas primary teachers nurture pupil self-assessment skills
of checking of their work and offering emotional support to cope with
disappointment/frustration). For all teachers, developing questioning skills to
enhance pupil learning and allowing time for pupils to explore their own ideas
are areas for exploration.
Pupils of all ages responded positively to creativity within their experiences of teaching and learning. This must encourage teachers to develop their own practice within this area so that together, the curriculum and pupil experience, equip pupils for their creative learning. An aspiration would be that pupils would transfer the creative skills learnt to the future workplace and enhance their contribution to society.

Despite being a term used in the curriculum, practice by teachers revolving around creativity has positive and negative elements. The findings from this small sample are not generalisable and must be read with caution surrounding how all teachers may or may not interpret the curriculum. However, they do confirm that many attitudes of teachers today are similar to those forty years ago. Nevertheless, for more impact more specific direction for teachers on how to teach creativity across the Key Stages for teachers is recommended, along with enthusiastic training (Initial Teacher Training and Continuing Professional Development) for teachers to be motivated and inspired themselves to be imaginative, risk-taking and original. This would enhance their own creative behaviours (such as those referred to by Musta’amal et al., 2009) and impact on their teaching and hence promote pupil learning and achievement.

References


NACCCE (National Advisory Committee on Creative and Cultural Education). (1999), *All Our Futures: creativity, culture and education*. London: DfEE.

Nicholl, B. and McLellan, R. (2008), “’We’re all in this game whether we like it or not to get a number of As to Cs.’ Design and technology teachers’ struggles to implement creativity and performativity policies’, *British Educational Research Journal, 34*(5), 585-600.


Appendix: Questionnaire

Creative Teaching: What is it all about?

1 How do you interpret/define ‘creative teaching’ in science lessons?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

2 Can you provide any examples of creative activities you have used in your lessons or ones that you have observed?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Please circle your most favoured response:

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 The creative child is a liability to my classroom because of his disruptive manner.</td>
<td>agree  disagree  no opinion</td>
</tr>
<tr>
<td>2 Creative problem solving ability is probably a natural strength that some students have and others do not.</td>
<td>agree  disagree  no opinion</td>
</tr>
<tr>
<td>3 It is possible to improve pupils’ ability to think creatively and to solve problems.</td>
<td>agree  disagree  no opinion</td>
</tr>
<tr>
<td>4 Only a few people in every thousand can truly be considered creative.</td>
<td>agree  disagree  no opinion</td>
</tr>
<tr>
<td>5 Because of the explosion of knowledge in the world, children cannot be taught how to cope with every situation they will ever meet.</td>
<td>agree  disagree  no opinion</td>
</tr>
<tr>
<td>6 Creative people are born, not made.</td>
<td>agree  disagree  no opinion</td>
</tr>
<tr>
<td>7 ‘Creativity’ is something which is found among only a few people.</td>
<td>agree  disagree  no opinion</td>
</tr>
<tr>
<td>8 If we were to try to teach pupils to become more creative, we run the risk of creating a nation of non-conforming individualists.</td>
<td>agree  disagree  no opinion</td>
</tr>
</tbody>
</table>
What kind of style do you adopt in your classroom? Please read each statement and circle the appropriate code:

<table>
<thead>
<tr>
<th>All the time</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Never</th>
</tr>
</thead>
</table>

1. I encourage pupils to show me what they have learned on their own. 6 5 4 3 2 1  
(dependence)

2. In my class, pupils have opportunities to share ideas and views. 6 5 4 3 2 1  
(integration)

3. Learning the basic knowledge/skills well is emphasised in my class. 6 5 4 3 2 1  
(motivation)

4. When my pupils have some ideas, I get them to explore them further before I take a stand. 6 5 4 3 2 1  
(judgement)

5. In my class, I probe pupils’ ideas to encourage thinking. 6 5 4 3 2 1  
(flexibility)

6. My pupils know that I expect them to check their own work before I do. 6 5 4 3 2 1  
(evaluation)

7. I follow up on my pupils’ suggestions so that they know that I take them seriously. 6 5 4 3 2 1  
(question)

8. I encourage my pupils to try out what they have learned from me in different situations. 6 5 4 3 2 1  
(opportunities)

9. My pupils who are frustrated can come to me for emotional support. 6 5 4 3 2 1  
(frustration)

10. Pupils in my class have opportunities to do group work regularly 6 5 4 3 2 1  
(integration)

Gender: male / female (please circle)

Thank you for completing this questionnaire and being a part of the research.
