Thinking Skills and Creativity 9 (2013) 165–185

Contents lists available at SciVerse ScienceDirect

Thinking Skills and Creativity

journal homepage: http://www.elsevier.com/locate/tsc

Creativity in crisis in Design & Technology: Are classroom climates conducive for creativity in English secondary schools?

Ros McLellan*, Bill Nicholl

University of Cambridge, Faculty of Education, 184 Hills Road, Cambridge CB2 8PQ, United Kingdom

ARTICLE INFO

Article history:
Received 11 June 2012
Received in revised form 23 October 2012
Accepted 13 November 2012
Available online 7 December 2012

Keywords:
Creativity
Classroom climate
Design & Technology education
Student perceptions
Teacher perceptions

ABSTRACT

Creativity is acknowledged to be important for economic growth and as an everyday life-skill but several reports have indicated that education should do more to harness it. In England legislation has made provision for creativity in schools but it continues to be problematic. This paper takes secondary Design & Technology (D&T) education in England as its focus, where creativity is acknowledged to be crucial for the design process but has been found to be lacking in student work. Research conducted in commercial organisations has indicated that organisational climate can help or hinder creativity. Thus, this paper explores whether organisational climate models can be usefully applied to the D&T classroom context and assesses whether the climate experienced by secondary students (aged 11–16 years) is conducive for creativity. Data are drawn from a number of sources including student ($N = 126$) and teacher ($N = 14$) interviews and student ($N = 4996$) and teacher ($N = 69$) questionnaires gathered across a total of 15 schools. In mapping the data to the nine climate dimensions outlined in Ekvall and Isaksen's climate model three themes emerged; challenge, freedom and idea support. Students felt much of the work they do lacks challenge, they have limited freedom, and they are not always supported in realising their design ideas. Hence students do not perceive the climate in their classrooms as conducive for creativity. Teachers' perceptions differed somewhat and this is discussed with reference to the performativity culture in which they are located and the implications of this for professional identity. As teachers can influence classroom climate, teachers can change their practice to enable creativity to flourish. Tentative suggestions for ways forward are outlined.

1. Introduction

Creativity is acknowledged to be important in education (Craft, 2005; Robinson, 1999) both for economic growth (Creative Economy & Programme, 2006Creative Economy Programme, 2006; Department for Culture Media and Sport, Department for Business Enterprise and Regulatory Reform, & Department for Innovation University & Skills, 2008) and as an everyday life-skill (Sternberg, Lubart, Kaufman, & Pretz, 2005). In England, interest in creativity has increased with the publication of several reports (Cox, 2005; Roberts, 2006), which have suggested that education could do more to harness creative talent. Similar debates are taking place in other national contexts (for instance see Keirl, 2005 for a discussion of the Australian context).

* Corresponding author. Tel.: +44 1223767663.
E-mail addresses: rwm11@cam.ac.uk (R. McLellan), ban22@cam.ac.uk (B. Nicholl).

1871-1871/$ – see front matter © 2012 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.tsc.2012.11.004

In principle, English schools should be well placed to help to support ministerial aspirations to make the UK the world's creative hub (Department for Culture Media and Sport, 2006). Government education policy over the last decade has promoted creativity following publication of the influential National Advisory Committee on Creative and Cultural Education Report 'All Our Futures: Creativity, Culture and Education (Robinson, 1999). For instance, the Creative Partnership Programme,[1] funded by government agencies between 2002 and 2011, was created as a direct response to the concern that a focus on literacy and numeracy was driving out opportunities for creativity in education. The National Curriculum for England and Wales explicitly states that the 'overarching framework' for general qualifications should include [among other things], opportunities for 'students to explore a subject. . .creatively' (QCA, 2007b, p. 2). Hence policy-makers in the UK recognise the importance of creativity and have placed it centre-stage in the curriculum for all subject areas.

However, creativity policies jostle with many others that schools have to take account of. In particular, 'performativity policies' (Ball, 2003), based on neo-liberal values, and intended to drive up standards through the introduction of free-market economic principles together with accountability mechanisms, have been introduced to the educational arena. Professional judgements need to be made in juggling the perceived differing and potentially conflicting demands of creativity and performativity policies, and such judgements call upon aspects of professional identity, in particular professional values (Pedder & MacBeath, 2008), which directly influence practice (Aguirre & Speer, 2000; Calderhead, 1996). However teacher beliefs and values are strongly influenced by the prevailing educational culture, that is the hegemonic performativity culture (Ball, 2003, 2004). Perhaps not surprisingly then the co-existence of creativity and performativity policies are well documented as creating tensions and dilemmas for practitioners who, on the one-hand, are encouraged to be innovative and encouraging of creativity, whilst on the other, are highly accountable for student performance, particularly in core subjects such as literacy and numeracy (Craft, 2005; Troman, Jeffrey, & Raggl, 2007; Turner-Bisset, 2007). This tension was the subject of a recent special edition of the *British Educational Research Journal* with further articles published in *Thinking Skills and Creativity* and these included not only contributions from the UK but also from Australia (Burnard & White, 2008; Craft & Jeffrey, 2008; Nicholl & McLellan, 2008) indicating the issue is of international significance. Issues of professional identity and questions about the professional development needed to foster creativity will therefore be returned to in discussing the implications of research presented in this paper.

The study reported below is set in the English secondary school D&T context. Internationally technology education is still developing as a distinct subject area (de Vries, 2009) and Jones (2009), highlights the importance of the historical, cultural and political context in understanding the evolution and current status of the subject in any given country. Hence D&T education in England differs from say Technology Education in the United States of America as the latter has its roots in industrial arts and technology education (Dugger, 2009) rather than the crafts (i.e. woodwork, metalwork, needlework, and domestic science) tradition in the UK (Benson, 2009). In England all schools follow the same National Curriculum for D&T and external government inspections (Ofsted) ensure implementation and maintenance of acceptable standards of teaching and learning in the subject. Although rooted in a crafts tradition, the subject has evolved over time in recognition of the need to prepare young people for a rapidly changing world. Hence students are expected to deploy intellectual and organisational skills to think and plan, as well as producing good craft (Benson, 2009). For instance the subject develops students' appreciation of product-development processes equipping them as 'consumers to make informed ethical judgements and independent economic decisions as they gain understanding of their responsibilities as citizens' (QCDA, 2007). However, despite the differences in technology education in different national contexts, we would argue that given that the co-existence of performativity and creativity policies have been recognised as potentially problematic in other countries, findings presented in the current paper will be of relevance to an international audience, particularly to those with similar policy contexts.

Turning now to the role of creativity in D&T in England specifically, in addition to the overarching framework noting that students should explore the subject creatively, the National Curriculum for D&T states:

> 'In design and technology pupils combine practical and technological skills with creative thinking to design and make products and systems that meet human needs. . . They learn to think creatively and intervene to improve the quality of life, solving problems as individuals and members of a team. . . They apply their creative thinking and learn to innovate.' (QCA, 2007a, p. 51)

These three from nine sentences outlining the importance of the subject clearly indicate that creative thinking and creativity are fundamental to the subject. This becomes apparent when the work students do in D&T is considered more carefully. The National Curriculum for D&T outlines two types of curriculum opportunities that students should be offered in the subject. Firstly, students should 'undertake focused tasks that develop knowledge, skills and understanding in relation to design and make assignments' (often referred to 'focussed practical tasks' or FPTs) and secondly, 'engage in design and make assignments in different and progressively more complex contexts, including for purposes and uses beyond the classroom' (usually abbreviated to design and make assignments or DMAs) (QCA, 2007a, p. 57). FPTs are usually short in duration taking no more than a couple of lessons and develop the skills needed for much longer DMAs, which are usually projects that last between two or three lessons but more typically half a term (or more for older students). For instance students

[1] The Creative Partnership Programme supported innovative long-term partnerships between schools and creative professionals such as artists, performers, artists and multimedia developers and involved over 90,000 teachers and one million young people Creative Partnerships (2010). Research – How Creative Partnerships makes a difference. Retrieved 2 December, 2010, from www.creative-partnerships.com/about/research.