

Out of the Box: the Promotion of Creativity in Learners

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Abstract

The DATA International Research Conference provides an opportunity for the 'sharing of evidence across cultures'. (Norman 2003: ix) This paper considers evidence from the culture of art and design higher education which, through its focus on creativity and individual development, could assist the achievement of design and technology's 'unique contribution' to student learning. (QCA, 1999)

In presenting the case, this paper offers a new perspective on the 'creativity in crisis' debate currently engaging design and technology educators. Similar contributions have been made by Martin (2003), Hopper & Downie (1998) and Shield (1995), amongst others. They highlight tensions within the sector, for example between 'making' and 'designing', between education and training, and between teacher-led and student-centred approaches, and suggest practical and philosophical ways in which such tensions could be alleviated.

The significance of the perspective offered here derives in part from the holistic nature of art and design education. It is suggested that this pedagogic model gains coherence through the placing of individual creativity at its centre; curriculum structure, content, delivery and assessment are designed to support this focus. Findings from theoretical research (eg. Perry 1968; Stein 1974; Amabile 1996) attest to the effectiveness of the approach, which is further confirmed by experiential research. The paper discusses these findings and suggests that a sharing of best-practice between the related disciplines of art, design and technology could help to lessen polarities and invigorate delivery of the design & technology curriculum.

Key words: individual creativity, pedagogy.

Introduction

This paper is drawn from an on-going research project which looks at the promotion of creativity in post-compulsory art and design education.

The project arose from discussions with colleagues in two of China's premier art and design institutions. Chinese society has traditionally valued the collective and conformity over the individual and the novel. The eastern definition of creativity has historically focused on social and ethical appropriateness rather than on the expression of individual 'originality' (Niu & Sternberg 2002). For economic and social reasons, the government now wishes to promote enterprise, creativity and innovation. Chinese art and design institutions have been tasked with achieving this ambition, working within in a social and cultural context which would appear to threaten their ability to achieve success. (eg. Sternberg & Lubart 1999)

Asked for advice, I became aware that similar, though perhaps less profound, tensions existed within the UK's creative educational provision. For example, formal assessment has become a central driver of education, influencing curriculum content, structure and delivery, despite a considerable body of research which demonstrates that it is detrimental to both creativity and creative teaching. (e.g. Torrance et al 1964; Amabile 1996) Within art and design education, the demand for an assessable product, criteria-referenced to pre-set learning outcomes, has begun to shift the emphasis from creative process to final outcome. (e.g. Hussey & Smith 2002) This shift lessens the time available for experimentation and creative incubation, potentially curtailing the creative process. Similarly, within design and technology, the focus on assessment and examination is tending to restrict both what is taught and how it is taught. Shield writes of the 'domination of design and make activity by assessment procedures' (1995: 189); Hopper and Downie voice concerns that this emphasis has resulted in a lessening of opportunities for 'children to fully engage in creative processes'. (1998: 59)¹

Research was undertaken, therefore, in order to identify pertinent theories of creativity against which to scrutinise the educational legitimacy of government-led initiatives and evaluate the validity of experiential evidence from the art and design sector.

¹ Ironically, the Chinese Education Department have recently designed a new school's curriculum in order to 'rectify the exam-oriented nature of the current curriculum' and thus 'create a fundamental shift in learning styles'. (People's Daily 2003)



Methodology

Through a literature review, factors were identified which appear to influence the creative development of the individual both positively and negatively. These formed the basis of questionnaires and subsequent interviews with lecturers in further and higher education (i.e. post-compulsory education). The data was triangulated through student questionnaires. In this way understandings gained from psychological and sociological theories of creativity were tested against the empirical evidence of pedagogic practice, and vice-versa.

The salient features of the cognitive, motivational and creative domains which contribute to creativity were considered. Teacher, learner and task (both algorithmic and heuristic) were interrogated in relation to creative development. Aspects covered include:

- student motivation and learning style;
- teaching approach and methods;
- project/task content and outcomes; and
- assessment methods.

To date, twenty academic staff and 120 students have taken part in the research. Respondents were asked to choose an art and design project which they had taught or undertaken and which had led to creatively successful outcomes (validated by assessment). The questions were designed to retrace the route through the creative process, identifying which interventions had affected the creative success of the project and, by implication, the learner. Staff were chosen on the basis of peer reference and examination results (or equivalent), and in order to collect data from a broad range of disciplines.²

The initial aim of the project is to define and evidence best-practice in the promotion of creativity in learners within the art and design FE/HE sector. Ultimately, these findings will be re-examined in the contexts of the USA and China.

Theories

The formal learning experience contains a number of reiterative variables. Research has tended to focus on three - teacher, learner and task. (e.g. Amabile 1996) Each variable is further influenced by the social context, macro and micro, within which it functions.

The context

Siegel and Kaemmerer (1978) identified leadership, consistency, ownership, acceptance of diversity, and opportunities for continuous development as the 'a

priori dimensions' of a creative organisational climate. Other research points to the importance of an ordered but non-hierarchical environment where speculation and fantasy are encouraged and ambiguity is tolerated. (Creativity in Education, 2003)

The teacher

Research suggests that the biggest single influence on the classroom environment is the teacher/lecturer. (e.g. Cummings 2003; Creativity in Education 2003) Successful lecturers (in terms of fostering creativity) are themselves self-motivated, creative thinkers, acting as models for their students. They offer individual attention and opportunities for independent learning. Teaching styles most conducive to the fulfilment of creative potential are those which encourage student responsibility through ownership, trust, and a low level of authoritarianism.

In terms of delivery, creativity is promoted by teaching methods which narrow the gap between teacher and learner, which cast the teacher in the role of facilitator and provide opportunity for active, even playful, engagement by learners, emphasising the process as well as the outcome.

The learner

An environment which promotes creativity will also encourage learner motivation (and vice versa). Learners become motivated when offered ownership and responsibility, when their input is valued and when they feel able to try out new ideas in an atmosphere which encourages 'what if' questioning and experimentation.

Learner motivation is related to learning styles. Because it is premised on the individual and the contingent nature of knowledge, Perry's identification of four main styles of learning related to undergraduates' changing definition of knowledge is particularly pertinent to art and design education. (1989) From its starting point of dualism (knowledge as monolithic proposition emanating from a single authority), students progress through multiplicity (knowledge as subjective opinion) to relativism (knowledge is evidenced and contextualised) and ultimately, but not invariably, to commitment. The commitment stage is reached when students use their relativist understandings to create a personal world view. The difficulty of this journey is evident:

'every step involves not only the joy of realisation but also a loss of certainty and an altered sense of

² Staff from the following discipline areas have taken part in the research to date: Animation; Ceramics; Contextual Studies; Fine Art; Graphic Design; Interior Architecture; Multi-media Design; Product Design; Textile Design; 3D Design. The eight interviewees quoted in this paper are referred to alphabetically i.e. A-H



self' - but it is the only route to a primary pedagogic goal - that of enabling students to become self-motivated, independent learners. (Perry 1989)

For learners to become active participants in their education, their definition of knowledge needs to change, as does a notion of the teacher as primary authority. Only within an environment which welcomes diversity and debate will learners progress towards the states of relativism and commitment which are pre-requisites of creativity.

The task

The learner's creative engagement is also significantly affected by the nature of the task set. Broadly speaking, tasks may be algorithmic or heuristic. Algorithmic tasks tend to have clearly structured paths leading to the solution, e.g. learning how to operate a simple software programme or how to solder metal. While an heuristic task may have an identifiable goal, the route-map does not exist. The explorer must find his/her own way through territory which is essentially uncharted, using existing knowledge and experience and also, crucially, creative intuition. There is a sense of direction, but, at least at first, no certainty of the steps or knowledge needed to arrive. Heuristic tasks are held to require creative thinking; algorithmic tasks are not. (Amabile, 1996)

Assessment

Heuristic tasks are challenging. The risk of failure is not insubstantial - for both teacher and learner. A supportive, non-judgemental environment is therefore essential. An emphasis on formal assessment clearly mitigates against such an environment. Intrinsic motivation and deep learning decrease significantly if student progress is evaluated too early, too harshly or too often. (e.g. Deci 1971, 1972)

Theory into Practice

Art and design by their very nature deal with speculative ideas and possibilities; diversity and divergence are essential for originality. The disciplines thus provide an ideal context for the development of creativity.

The model for UK art and design education is the atelier system which enabled studio apprentices to gain skills, knowledge and ultimately independence, through guided practice of their craft. This approach continues to inform art and design pedagogy. Its influence is perhaps due in part to the fact that the majority of lecturers and course directors are or have been creative practitioners (100% of those interviewed for the research were in this category). Unsurprisingly their teaching methods draw on both their creative and pedagogic experiences.

The development of the individual's innate creative potential was held by all respondents to be the primary aim of art and design education:

'we must give the students the right conditions to find their own selves and their most exciting minds'. (A)

Responses also suggested that the pedagogic aspirations which emerge from this aim are clearly understood and strongly supported:

'we are trying to tap in to the imagination and curiosity of the student, helping them access something that's deep inside themselves'; (B)

'the creativity is there, we just set up strategies to allow it to emerge'. (C)

This focus on creativity and individual development appears to have shaped all aspects of art and design education, affecting teaching approaches and methods, attitudes to subject knowledge and the curriculum, and the responses of learners.

Interviewees highlighted a belief in the importance of encouraging a sense of collaboration and partnership in the exploration of the subject area:

'my job is to help them have the confidence to say what they as individuals want to say - their own view...not to impose how I see the world; (D)

'the teaching style is relaxed, a sharing of information, encouraging them to contribute'. (E)

Student responses affirmed the appropriateness of this teaching approach; 59% referred to 'encouraging and open-minded teaching' as making a significant contribution to their creative success.

Teaching methods preferred by lecturers were those which acknowledge plurality and encourage debate e.g. individual and group tutorials, discussion groups and group critiques:

'we do lots of one-to-one teaching, looking at the problem together, like a dialogue, to help them come up with possible solutions'. (C)

The ability of such methods to promote learner creativity was confirmed by 73% of students in the initial survey. By comparison, teaching methods which positioned the teacher as the primary source of knowledge (e.g. lectures, seminars, demonstrations, handouts) were judged significant for the development of creative abilities by only 13% of students.



Responses from lecturers frequently emphasised the importance of the creative process, both in its own right and as the route to a creative outcome. The majority of projects discussed were structured to provide specific opportunities for playful experimentation, known to encourage the making of new connections and thus creative thinking:

‘we encourage them to play, conceptually and practically, to construct their own understanding of the language of textiles’. (B)

Concern was expressed that an emphasis on assessed outcomes undermined this engagement. The solution to this perceived problem was to turn the creative process itself in to the assessable outcome. Criteria such as ‘breadth of experimentation, ‘range of ideas’ and ‘innovative use of media’ were used to assess speculative work-in-progress.

Project work, a central feature of post-compulsory art and design education, is invariably heuristic in nature, demanding a challenging synthesis of cognitive and creative abilities and high levels of motivation. The eighteen projects which were discussed in the field research were all heuristic although three (requiring computer-software and print-technology learning) had significant algorithmic aspects. Lecturers delivering the latter projects were emphatic that mastery of the technology was the route to a creative outcome rather than an end in itself:

‘the students develop competencies and use the tools to unleash their creative thinking’. (F)

In all cases subject-specific knowledge was integral to the project, feeding in to, and invigorating, the creative process. Material knowledge and skills were presented as the starting point rather than the conclusion:

‘skills are an important element in terms of the empowerment of the individual student...one of the primary building blocks for their creativity’. (G)

Related bodies of knowledge - historical, contextual or theoretical – also tend to be presented as a means to an end. Students are encouraged to use this knowledge to construct new meanings, to analyse and reinterpret, acknowledging ‘the importance of multiple perspectives, pluralism (and indeterminacy)’. (Danvers 2003: 57) Course documentation asserted the interdependence of academic knowledge and studio practice; nonetheless some responses suggest that students (and staff) have difficulty ‘in seeing how the (academic) component links to the courses’. (H)

The learner-centred approach, predicated on a contingent view of knowledge, places considerable responsibility on the individual learner. They are expected to move from the comforting shallows of dualism into the rough waters of relativism and commitment.

‘We ask them to leap off the precipice...to aim high very early...it’s dangerous. You need to keep reassuring them and say “failure’s ok; failure’s absolutely necessary”’. (I)

Research findings suggest that students understood the nature of the educational partnership on offer and were fully committed to it. In one survey (of first- and third-year BA students), self-motivation and independence were cited as essential to creative success by 70% of respondents. Students were also clear about the pedagogic intentions which shaped their educational experience; ‘to take risks (in order) to develop my creativity’, ‘to develop, push boundaries’, ‘to think outside the lines and see more unusual possibilities’. The extent of the challenge they are taking on was eloquently expressed by a first-year BA student who suggested that ‘creativity is using skills and knowledge to see things differently and do the impossible’.

Conclusions

The pedagogic model presented here has, we argue, demonstrated its efficacy in the promotion of creativity. Its methodologies are supported by experience and by psychological and sociological theories of creativity. The elements which contribute to it are neither original nor exclusive to art and design education. What makes the model unique, we suggest, is the philosophical view which underpins it and the resulting coherence of aims and methods.

Philosophically, art and design education is based on a belief in innate creative potential. Social-scientist Carl Rogers argued that the act of creativity is fundamental to, and made manifest by, ‘man’s tendency to actualise himself, to become his potentialities’. (Rogers, 1952:35) If nurtured, this innate tendency towards self-actualisation and fulfilment can provide a well-spring of the intrinsic motivation which underpins creativity.

The research suggests that commitment to this philosophy is near-universal on the part of both teachers and learners in art and design. The result is a pedagogy based not on subject-knowledge but on a philosophical position which affirms the ‘emancipatory and transformative’ nature of education, enabling it to be applied beyond the confines of the art & design sector. (Danvers 2003:47)



There are significant commonalities between art and design and design and technology. D&T education is intended to help pupils become 'autonomous and creative problem-solvers' able to combine 'practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices'. (National Curriculum website 2004) Similar aspirations are outlined in the 2001 *Benchmark Statement for Art and Design*. Learners are required to develop and communicate ideas, to work with tools, materials and equipment, to contextualise and evaluate product and process. Fundamentally, both sectors are concerned with the conception and material production of a creative outcome, i.e. one which is original and appropriate.

We argue that a focus on this creative endeavour has given coherence and clarity to art and design pedagogy. Research, and experience, suggest that a similar 'core business' focus could help to energise the delivery of a creative education within the design and technology sector.

Appendix

Student participants	Total = 100
Foundation art & design (aged 18+)	total = 39
BA Year 1 textile design (aged 19+)	total = 24
BA Year 3 graphic design (aged 21+)	total = 37

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