Unlocking the creative gates: Who’s got the keys?

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Tasks

• Make a list of 20 everyday animals
Tasks

• Cat
• Dog
• Mouse
• Bird
• ?
• ?
• ?
• ?
Fixation

• If cat or dog was in your top five, then you think like many other people. This is based Mednick’s research (1962). Similar studies, including our own with school aged children (see Nicholl and McLellen, 2007), have found that many people think like this.

• This way of thinking is called fixation.

• In fact, even designers and design engineers think in fixated ways!
Design fixation

‘...defined as a blind adherence to a set of ideas or concepts limiting the output of conceptual design’

(Janson & Smith, 1991, p.3)
Key messages

• Creativity is a socio-cultural phenomenon as much as it is a cognitive phenomenon
  – Complex
  – Appreciate (and understand) this complexity in context of ‘design’ education (to know, learn)

• The importance of teachers/lecturers in teaching for creativity

• Ultimately, teachers/lecturers are the gatekeepers. They plan teaching episodes for students to do.
## Definition of creativity

**Literature review-Western perspective**

- **Novel**
  - new, original

- **Appropriate**
  - functional
  - work as intended

- **Ethical**
  - sustainable or
  - eco-design
Definition of creativity

Literature review-Western perspective

• But this definition treats creativity as an ‘end product’
• Doesn’t conceptualise creativity:
  – As a process (creative processes, see later)
  – Within a socio-cultural ‘system’
Socio-cultural approach to creativity

Red path, is the path students take in order for their work to be accepted as creative. Crucially, they go via the teachers.
Socio-cultural approach to creativity

This has Implications for teaching and learning for creativity? The importance of teacher within this socio-cultural system is stated.
Policy Documents

Creative thinking
Generative thinking
Parallel thinking
de bono-pragmatic
Thinking outside the box
Tasks

• So policymakers/politicians want students to think creatively.
• Indeed, to conceptualise design, without creativity, is a nonsense.
• But wanting/conceptualising creativity doesn’t necessarily make it happen.
• Policy doesn’t mean creativity will happen in practice (see Nicholl and McLellen, 2008).
• Thus the teacher is important in this system.
Tasks

Our studies have shown that many of the tasks teachers plan for students:-

• develop **procedural knowledge** only. For example, knowledge and skills to make a box.

• They are very **focussed and structured** tasks and taught in a very **didactic** way-using a rigid **linear design process**
Teaching via the linear design process

- brief
- research
- specification
- ideas
- evaluation
- making
- CAD/CAM
- develop ideas
Tasks

- The tasks teachers plan do not provide opportunities for students to experience the creative processes which are required for creative thinking.
- Consequently, our studies have found that students rely on stereotypical, clichéd designs. In other words, they think in fixated ways!
How creative is student work?
How creative is student work?
Teachers as gatekeepers

- So, we argue that teachers are important within this socio-cultural system.
  - Teachers plan tasks
  - Teachers need to understand their role within this system
  - Teachers need to understand fixation
  - Teachers need to understand how to avoid fixated thinking, and plan strategies that help students avoid fixation, and thus provide opportunities for students to think more creatively.
Firstly, how do designers’ avoid fixation
Case Studies

• Bill discussed a number of case studies, showing how various designers use different cognitive processes to help them think creatively—namely analogy, metaphor, conceptual combination and extension.
Louisa Parris-Designer

• Fashion Designer
• Evening wear
• Example of using analogy. That is, an old perfume bottle, can be a dress. Thus analogy is used as a creative process
analogy
Can students (11-14 years) be creative?
Case Studies

• Bill has produced many resources/strategies which helped teachers, to plan teaching episodes, which allowed students to experience using metaphors, analogies etc.

• The following slides show these resources and a sample of students work using these processes.
Resources available at

www.mutr.co.uk
Students work: 11 years old

• Following slides are examples of how students used shapes and forms of flowers to design and make ‘picture frames’ and ‘mirror frames’ that were not rectangular!
Understanding Creativity For Creative Understanding
Understanding Creativity For Creative Understanding
Understanding Creativity For Creative Understanding
Recent publications

Journal articles

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, Vol. 34, No. 5, pp. 585–600
McLellan, R. & Nicholl, B. (forthcoming) ‘If I was going to design a chair, the last think I would do look at is a chair’. Product analysis and the causes of fixation in students' design work 11-16 years. International Journal of Technology and Design Education. SENSE

Book Chapters

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